

ANNUAL REPORT 2021 2022



Vallabhbhai Patel Chest Institute
University of Delhi, Delhi, India





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Inauguration of various facilities at VPCI: (1) Post Covid Respiratory Management Centre, inaugurated by Prof. PC Joshi, Honourable Vice Chancellor, Delhi University on May 24, 2021 (2) National Reference Laboratory of Antimicrobial Resistance in Fungal Pathogen, inaugurated by Prof. V S Chauhan, Chairman, Governing Body, VPCI on September 13, 2021 (3) Allergy Testing Centre, inaugurated by Prof. V S Chauhan, Chairman, Governing Body, VPCI on January 6, 2022

ANNUAL REPORT

2021–22



Vallabhbai Patel Chest Institute
University of Delhi, Delhi

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From the Director's Desk



It is my privilege to present the Institute's Annual Report for the year 2021-22. The Institute with the support of the University of Delhi and Ministry of Health and Family Welfare, Government of India, has been able to strive and thrive to achieve its objectives: to conduct research in basic and clinical aspects related to chest diseases, to train post-graduates in Pulmonary and Critical Care Medicine (DM and MD in Pulmonary Medicine) and allied disciplines (MD Microbiology, Biochemistry, Physiology and Pharmacology), and PhD in various subjects, to develop new diagnostic technology and disseminate scientific knowledge related to Chest Medicine to other Institutions of the country and, over and above all, to provide specialised patient care services to patients from India as well as other countries of the Asia during the year under report.

A large number of physicians, paramedical staff and students from other Universities/Institutions/Colleges got training in disciplines, such as Biochemistry, Microbiology, Physiology etc in various departments of the Institute during the year. The research laboratories of the Institute are being equipped with the latest technology to keep pace with the rest of the world.

The research contributions from the Institute are widely acclaimed, funded by various Government Departments, like ICMR, CSIR, Ayush DHR-MoHFW and DRDO. The faculty members and students of the Institute delivered orations, guest lectures and presented papers in the International and National conferences through webinar and virtual mode. The faculty members and students of the Institute received several Awards and Honours in their field of their specialisation. The Institute also organised workshops and eminent experts (virtual mode) shared their experiences.

The Viswanathan Chest Hospital (VCH), the clinical wing of the Institute, is a tertiary care Chest Hospital with state-of-the-art patient-care facilities.

National Tobacco Quitline Services (NTQLS) at VPCI is a pioneering concept in our country to tackle the growing menace of tobacco addiction in a cost-effective manner.

With the aim to disseminate scientific knowledge and latest developments in the field of chest diseases and allied sciences, the Institute continued the publication of its reputed quarterly publication The Indian Journal of Chest Diseases & Allied Sciences, in collaboration with the National College of Chest Physicians (India). The journal has wide national and international circulation. Institute also continues to publish its biannual Newsletter.

Thrust areas identified for special attention in near-future include COPD, Bronchial Asthma and Lung Cancer.

Prof. Raj Kumar

Annual Report (2021–22)

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MILESTONES OF INSTITUTE

April 6,	1949	Foundation stone of the Institute was laid down by Sardar Vallabhbhai Patel.
November,	1951	Ad-hoc Governing Body was appointed by the Executive Council of University of Delhi for administrative affairs of the Institute.
December,	1951	Main building of the Institute was completed.
January 12,	1953	The Institute was formally opened by Rajkumari Amrit Kaur, the Union Minister of Health, Government of India.
		Prof. R. Viswanathan was appointed as the Founder-Director. The grant for 1953- 54 was Rs.2 lakhs.
January 21,	1955	A regular Governing Body was constituted by the Executive Council of the University of Delhi for the management and administration of the Institute.
April 4,	1955	The first meeting of the regular Governing Body was held.
	1955	Prof. A.S. Paintal reported the discovery of lung deflation receptors, a historical landmark in understanding the functioning of lung and its diseases.
July 1,	1957	Prof. R. Viswanathan took over as full-time Director of the Institute. Previously, he was the Deputy Director-General of Health Services, Government of India and Honorary Director of the Institute.
September 24,	1957	Pt. Jawaharlal Nehru said in a message: "It was a brave act of the University of Delhi to start the V.P. Chest Institute".
October 24,	1957	Clinical Research Centre was inaugurated by Dr Rajendra Prasad, the President of the Republic of India.
January 24,	1959	Indian Association for Chest Diseases was inaugurated by Sir A.L. Mudaliar. It was re-named as the National College of Chest Physicians (India) in January 1981.
July,	1959	The Indian Journal of Chest Diseases, a Quarterly Journal, was started under the joint auspices of the V.P. Chest Institute and the Indian Association for Chest Diseases.
July,	1959	A ward of 20 beds was opened to admit patients.
	1959	By a resolution of the Governing Body, V.P. Chest Institute was nominated as a "National Institute for Teaching and Research in Chest and Allied Diseases".
January,	1960	A Diploma course in Tuberculosis Diseases, started in March 1947, was re-named as "Diploma in Tuberculosis and Chest Diseases" (DTCD) from XIV Course. The XV DTCD Course started from July 1960.
April 6,	1961	Foundation Day Celebrations of the Institute was started.
April 7,	1962	Foundation stone of Patel Niwas, a Post Graduate Hostel, was laid down by Dr C.D. Deshmukh, Vice-Chancellor, University of Delhi.
January 26,	1963	A contingent of the Institute staff participated in the Republic Day parade.
February 20-24,	1963	VII International Congress on Diseases of the Chest was held at Vigyan Bhawan under the auspices of V.P. Chest Institute, Indian Association for Chest Diseases and the University of Delhi.

August 1,	1964	Prof. A.S. Paintal joined as the Director of the Institute.
April 6,	1965	Patel Niwas (a PG Student Hostel) was inaugurated by Dr C.D. Deshmukh on the XVI Foundation Day of the Institute.
	1966	Prof. A.S. Paintal was elected as the Fellow of the Royal Society of Edinburgh.
	1969	Padma Shree was awarded to Prof. R. Viswanathan.
	1974	Padma Bhushan was awarded to Prof. R. Viswanathan.
	1981	Prof. A.S. Paintal was elected as the Fellow of the Royal Society of London.
	1984	Prof. A.S. Paintal was elected as the General President of the Indian Science Congress Association [1984-85].
	1985	Prof. H.S. Randhawa was elected as the Vice-President of the International Society for Human and Animal Mycology [1985-88].
	1986	Prof. A.S. Paintal was appointed as the Director-General of the Indian Council of Medical Research.
	1986	Padma Vibhushan was awarded to Prof. A.S. Paintal.
	1986	Prof. A.S. Paintal was elected as the President of the Indian National Science Academy [1986-88].
November 10,	1991	Prof. H.S. Randhawa joined as the Director of the Institute.
October 5,	1998	Dr V.K. Vijayan joined as the Director of the Institute.
April 6,	1999	Golden Jubilee Celebrations of the Foundation Day of the Institute. VPCI Oration was started.
June 14,	1999	24-hour Respiratory Emergency Services were started.
November 12,	1999	His Excellency, Shri K.R. Narayanan, the President of India, received the copy of Compendium of Activities (VPCI) 1949-99.
August 30,	2000	A New Ward (with an additional 40 beds) was inaugurated by Dr A.K. Walia, Honourable Minister for Health, Govt. of NCT of Delhi.
	2000	Dr V.K. Vijayan was elected as the International Regent, American College of Chest Physicians [2000-06].
March,	2001	A Respiratory Critical Care Unit was started.
March 15,	2001	CT Scan Centre was inaugurated by the Honourable Padma Shree Dr C.P. Thakur, the Union Minister of Health and Family Welfare, Government of India.
November 21,	2001	Tobacco Cessation Clinic was started.
August 14,	2002	A State-of-the-Art Oxygen Plant was installed and started.
January 12-14,	2003	International Conference on Chest Diseases and Allied Sciences was held at India Habitat Centre, New Delhi, to commemorate the Golden Jubilee of the Inauguration of the Institute.
	2004	Website of the Institute was started (www.vpci.org.in).
September 24,	2005	Prof. Autar Singh Paintal Memorial Oration was started.
January 10,	2006	An 8-bedded Intensive Care Unit was started.

December 8,	2006	Inauguration of the Golden Jubilee Auditorium by organising an International Symposium on Herbal Drug Research and Therapy in Chest Medicine.
March 2,	2007	The Hospital wing of the Institute, Clinical Research Centre was re-named as "Viswanathan Chest Hospital" in honour of the Founder-Director of the Institute and the Golden Jubilee Auditorium was re-named as "Paintal Memorial Golden Jubilee Auditorium" in honour of the former Director of the Institute by a resolution of the Governing Body.
June 22,	2007	Yoga Therapy and Research Centre [in collaboration with the Morarji Desai National Institute of Yoga (MDNIY), New Delhi], was started.
September 18,	2007	Cardio-pulmonary Rehabilitation Clinic was started.
September 17,	2009	Approval by the University of Delhi to start Superspeciality DM Course in Pulmonary and Critical Care Medicine with an intake of two students per year.
August 3,	2010	Approval by the University of Delhi to start Diploma Course in Allergy and Clinical Immunology in VPCI with an intake of two students per year.
February 12,	2011	National Centre of Respiratory Allergy, Asthma and Immunology was started.
March 15,	2011	Permission from Medical Council of India to start DM (Pulmonary Medicine) course with intake of two students per year from the academic year 2011-12.
June 1,	2011	Prof. S.N. Gaur joined as the Acting Director.
November 21,	2012	Prof. Rajendra Prasad joined as the Director of the Institute.
May 7,	2013	DOTS Centre was started.
August 18,	2013	DMA Centenary Institution Award received from Smt Sheila Dikshit, the Hon'ble Chief Minister, Government of NCR, Delhi for the "Outstanding Contribution in the Field of Patient Health Care".
August 23,	2013	New Ward (44 beds) was started. VPCI Newsletter was started.
September 15,	2014	VPCI Gym was inaugurated.
January 6,	2015	In the memory of Prof. A.S. Paintal, a museum was opened, which was dedicated to Prof. Paintal's life and contributions in the world of science, inspiring young scientist, researchers and academicians.
May 30,	2016	National Tobacco Quit Line Services, which functions from the Institute was inaugurated by Shri J.P. Nadda, Union Minister of Health and Family Welfare, Government of India, during the "World No Tobacco Day" programme organized by WHO-India, Ministry of Health and Family Welfare, Government of India and the National Heritage City Development and Augmentation Yojana (HRIDAY), at New Delhi.
September 30,	2016	Release of VPCI Postal Envelope by Prof. S.N. Gaur, Director (Acting), VPCI at "Neelambari-2016", a District Level Philately Exhibition organized by Sr. Superintendent of Post Offices, Delhi.
February 20,	2017	VPCI Indoor Games Center was inaugurated.
June 6,	2017	Prof. A. Ray joined as the Acting Director.
November 3,	2017	Prof. Raj Kumar joined as the Acting Director.

December 8,	2017	An MOU was signed between Vallabhbhai Patel Chest Institute (VPCI), University of Delhi, Delhi and Department of Allergology, University Hospital, Munster, Germany (UKM) on Teaching and Training; Exchange of Information and Academic Materials and Exchange of Faculty, Research Scholars and Administrative and Other Staff.
January 12,	2018	Patient Education Centre was inaugurated.
April 6,	2018	Daily Digital Pollen Count Information for Public was inaugurated by Shri J.P. Nadda, Hon'ble Union Minister of Health and Family Welfare, Government of India
	2018	DM (Pulmonary Medicine) was re-started.
October 15,	2018	The Renovated Kitchen of Viswanathan Chest Hospital (VCH) was inaugurated, which is dedicated to the patients admitted at VCH and ensures hygienic meal.
September 28,	2018	Prof. Raj Kumar joined as the Director of the Institute.
April 1	2019	Started Short-Term Training Programme on Pulmonary Function Test (3 Months Duration).
May 31,	2019	Prof. Raj Kumar, Director VPCI, received the prestigious World No Tobacco Day Award for 2019.
May 31	2019	Prof. CG Uragoda Oration-2019 was awarded to Prof. Raj Kumar in the field of Allergy and Immunotherapy by Sri Lanka College of Pulmonologists at Sri Lanka.
June 7,	2019	Renovated Canteen of the VPCI was re-opened.
September 16,	2019	Registration and Waiting Hall for Patients at VCH was inaugurated.
	2019	VPCI declared as Centre of Excellence for climate sensitive allergic diseases under National Program for Climate change and human Health in 2019.
March 4,	2020	Pradhan Mantri Jan Arogya Yojana (PMJAY) Counter at VCH was inaugurated by Shri Ashwini Kumar Choubey, Hon'ble Minister of State for Health and Family Welfare, Government of India.
March 4,	2020	Inauguration of Expanded National Tobacco Quit Line Services by Shri Ashwini Kumar Choubey, Hon'ble Minister of State for Health and Family Welfare, Government of India.
June 16,	2020	Tele Medicine for registered patients was started.
October 1,	2020	Composter-A unit of Solid Waste Management Machine was installed at the Institute by Prof. V.S. Chauhan, Chairman, Governing Body, VPCI.
October 1,	2020	VPCI Mobile Application was launched.
	2020	Post COVID-19 Respiratory Management: Expert Panel Report was published.
May 24,	2021	Inauguration of VPCI Post Covid Respiratory Management Center by Prof. P C Joshi, Honorable Vice Chancellor, Delhi University.
September 13,	2021	Inauguration of National Reference Laboratory of Antimicrobial Resistance in Fungal Pathogen by Prof. V.S. Chauhan, Chairman, Governing Body, VPCI
January 06,	2022	Inauguration of Allergy Testing Centre by Prof. V.S. Chauhan, Chairman, Governing Body, VPCI.
March 11,	2022	Release of Indian Guidelines for Diagnosis of Respiratory Allergy Prepared by Vallabhbhai Patel Chest Institute by Prof. V. S. Chauhan, Chairman Governing Body, VPCI

Prof. R. Viswanathan-VPCI Oration

1 st Oration	April 6, 1999	Prof. N.K. Ganguly, Director-General, Indian Council of Medical Research, New Delhi
2 nd Oration	April 6, 2000	Prof. A.S. Paintal, former Director-General, ICMR and former Director, VPCI.
3 rd Oration	April 6, 2001	Dr S. Lakshminarayanan, University of Washington School of Medicine, Washington, Seattle, USA.
4 th Oration	April 6, 2002	Dr S. Padmavati, President, All India Heart Foundation and Director, National Heart Institute, New Delhi.
5 th Oration	April 7, 2003	Prof. J.S. Bajaj, former Member, Planning Commission, Government of India and former Professor and Head, Department of Medicine, All India Institute of Medical Sciences, New Delhi.
6 th Oration	April 6, 2004	Prof. H.S. Randhawa, former Director, V.P. Chest Institute, University of Delhi, Delhi.
7 th Oration	April 6, 2005	Prof. Naranjan S. Dhalla, Distinguished Professor and Director, Institute of Cardio-vascular Sciences, St. Boniface General Hospital and Research Centre, University of Manitoba, Winnipeg, Canada.
8 th Oration	April 6, 2006	Prof. C.N. Deivanayagam, Former Medical Superintendent, Hospital for Thoracic Medicine, Chennai.
9 th Oration	April 6, 2007	Prof. K.K. Talwar, Director, Postgraduate Institute of Medical Education and Research, Chandigarh.
10 th Oration	April 6, 2008	Prof. C.R. Babu, former Pro-Vice-Chancellor, University of Delhi, Delhi.
11 th Oration	April 7, 2009	Prof. Peter J. Barnes, Head of Respiratory Medicine, Imperial College, London and Professor of Thoracic Medicine and Head of Airway Disease at the National Heart and Lung Institute and Honorary Consultant Physician at Royal Brompton Hospital, London.
12 th Oration	April 6, 2010	Prof. M.K. Bhan, Secretary, Government of India, Department of Biotechnology, New Delhi.
13 th Oration	April 6, 2011	Dr Vishwa Mohan Katoch, Secretary to the Government of India, Department of Health Research, Ministry of Health and Family Welfare and Director-General, Indian Council of Medical Research, New Delhi.
14 th Oration	April 6, 2012	Prof. Sami Bahna, Chief, Allergy and Immunology Section, Louisiana State University, LA, USA, and Past-President, American College of Allergy, Asthma and Immunology, USA.
15 th Oration	April 6, 2013	Dr W. Selvamurthy, Former Distinguished Scientist and Chief Controller R&D (LS&IC), DRDO, Ministry of Defence, Government of India, New Delhi.
16 th Oration	April 6, 2014	Prof. P.S. Shankar, Emeritus Professor of Medicine, Rajiv Gandhi Institute of Health Sciences, Bangalore, Karnataka.
17 th Oration	April 6, 2015	Prof. K.C. Mohanty, former Director-Professor, Department of Chest and TB, K.J. Somaiya Medical College and Hospital, Mumbai.

18 th Oration	April 6, 2016	Prof. S.K. Jindal, former Head, Department of Pulmonary Medicine, Post Graduate Institute of Medical Education and Research, Chandigarh.
19 th Oration	April 6, 2018	Prof. S.K. Katiyar, former Principal and Dean and Professor and Head, Department of Tuberculosis and Respiratory Diseases, Ganesh Shankar Vidhyarthi Memorial (G.S.V.M.) Medical College, Kanpur.
20 th Oration	April 6, 2018	Prof. Randeep Guleria, Director, All India Institute of Medical Sciences, New Delhi.
21 st Oration	April 5, 2019	Dr Rohit Sarin, Director, National Institute of Tuberculosis and Respiratory Diseases (NITRD), New Delhi

Prof. A.S. Paintal Memorial Oration

1 st Oration	September 24, 2005	Prof. M.S. Valiathan, Honorary Adviser, Manipal Academy of Higher Education, Manipal (Karnataka).
2 nd Oration	September 24, 2006	Prof. P.N. Tandon, President, National Brain Research Centre Society, Gurgaon.
3 rd Oration	September 24, 2007	Prof. P.N. Srivastava, First Chancellor, Manipur Central University, Imphal and former Vice-Chancellor, Jawaharlal Nehru University, New Delhi.
4 th Oration	September 24, 2008	Prof. Nanduri R. Prabhakar, Director, Centre for System Biology of Oxygen Sensing, Department of Medicine, University of Chicago, USA.
5 th Oration	September 24, 2009	Prof. Arun Dharmarajan, Winthrop Professor, School of Anatomy and Human Biology, Faculty of Life and Physical Sciences, The University of Western Australia, Nedlands, Perth, Western Australia.
6 th Oration	September 24, 2010	Prof. Chulani Tissa Kappagoda, Professor of Medicine, University of California, Davis, USA.
7 th Oration	September 23, 2011	Prof. J.S. Guleria, Senior Consultant (General Medicine), Sitaram Bhartia Institute of Science and Research, New Delhi and former Professor and Head, Department of Medicine, and Dean, AIIMS, New Delhi.
8 th Oration	September 24, 2012	Prof. S.K. Jain, Senior Consultant, Respiratory Medicine, Max Hospital, Noida, Coordinator, DNB (Respiratory Medicine), Metro Hospital, Noida, Ex-Advisor and Member, Scientific Advisory Committee, NIREH (ICMR), Bhopal and Ex-HOD, Cardio-respiratory Physiology, VPCI.
9 th Oration	September 24, 2013	Prof. Samir K. Brahmachari, Secretary, Government of India, Department of Scientific and Industrial Research, and Director-General, CSIR, New Delhi.
10 th Oration	September 24, 2014	Prof. M. Fahim, Adjunct Research Professor, Department of Physiology, Hamdard Institute of Medical Sciences and Research, Jamia Hamdard, New Delhi and former Professor and Head, Department of Physiology, VPCI.
11 th Oration	September 24, 2015	Prof. A.K. Prasad, Chairman, Influenza Foundation of India, and President, Indian Virological Society and former Professor and Head, Department of Respiratory Virology, VPCI.

12 th Oration	September 23, 2016	Dr Ashima Anand, Principal Investigator, DST Research Project, V.P. Chest Institute, university of Delhi, Delhi.
13 th Oration	September 22, 2017	Dr K. Ravi, Former Professor and Head, Department of Physiology, V.P. Chest Institute, University of Delhi, Delhi.
14 th Oration	September 24, 2018	Dr A.K. Jain, Professor of Excellence, Department of Physiology, Maulana Azad Medical College, New Delhi.
15 th Oration	September 24, 2019	Professor V.S. Chauhan, ICGEB, Jawaharlal Nehru University, New Delhi -110067

Prof. H.S. Randhawa Oration

1 st Oration	January 12, 2015	Prof. Ziauddin Khan, Chairman, Department of Microbiology, Kuwait, University, Kuwait.
2 nd Oration	January 12, 2016	Prof. Indira Nath, former Faculty Member, Department of Pathology, All India Medical Institute of Medical Sciences, New Delhi.
3 rd Oration	January 12, 2017	Prof. Subrata Sinha, Director, National Brain Research Centre, Gurugram, Haryana.
4 th Oration	January 12, 2019	Prof. Yogendra Singh, Department of Zoology, University of Delhi, Delhi.
5 th Oration	January 12, 2019	Prof. Yogendra Singh, Department of Zoology, University of Delhi, Delhi.
6 th Oration	March 4, 2020	Professor Rakesh Bhatnagar, Vice Chancellor, Banaras Hindu University, Varanasi, Uttar Pradesh.

Dr V.K. Vijayan Oration

1 st Oration	October 26, 2015	Dr Soumya Swaminathan, Secretary, Department of Health Research, Ministry of Health and Family Welfare, Government of India, and Director- General, ICMR, New Delhi.
2 nd Oration	October 26, 2016	Prof. Digambar Behera, Head, Department of Pulmonary Medicine, Post-Graduate Institute of Medical Education and Research, Chandigarh.
3 rd Oration	October 24, 2017	Prof. Seyed Ehtesham Hasnain, Vice-Chancellor, Jamia Hamdard, New Delhi.
4 th Oration	October 24, 2018	Dr J.C. Suri, former Consultant, Professor and Head, Department of Pulmonary, Critical Care and Sleep Medicine, VMMC and Safdarjung Hospital, New Delhi.
5 th Oration	October 24, 2019	Dr S.K. Luhadia, Professor and Head, Department of Respiratory Medicine, Geentanjali Medical College and Hospital, Udaipur, Rajasthan.

THE INSTITUTE

The Vallabhbhai Patel Chest Institute (VPCI) is a post-graduate medical Institution devoted to the study of chest diseases. It is located in the Delhi University main campus providing the requisite academic environment in which a wide range of scientific facilities are available in various departments along with an excellent Institute Library.

Objectives

The main objectives of VPCI have been to conduct research on basic and clinical aspects of chest medicine, to train post-graduates in Pulmonary Medicine and allied subjects, to develop new diagnostic technology and to disseminate it to other institutions in the country and to provide specialised clinical and investigative services to patients.

Administration

The VPCI is a maintained Institution of University of Delhi and is fully funded by the Grants-in-Aid received from the Ministry of Health and Family Welfare, Government of India. The Institute is governed and administered by its own Governing Body as Constituted under Ordinance XX (2) of the University of Delhi Act. The Director, who is appointed by the Executive Council of University of Delhi, is the Chief Executive of the Institute. The Director of the Institute also functions as Member-Secretary (Ex-Officio) to the Governing Body of the Institute. The Institute also has a Standing Finance Committee constituted by the Governing Body to make recommendations about its budgetary requirements.

Organisation and Management

The organisation and management of the Institute is through Departmentation of activities based on various areas of specialisation and functions. The Academic, Scientific and Clinical services are organised under the Departments of Anaesthesiology, Cardio-respiratory Physiology, Radiodiagnosis and Imaging, Respiratory Allergy and Applied Immunology, Pulmonary Medicine and Thoracic Surgery. These Departments along with Outdoor/ Indoor patient care services and Respiratory Emergency section are housed in the Viswanathan Chest Hospital. The other Departments of the Institute include Biochemistry, Clinical Biochemistry, Biostatistics, Medical Mycology, Microbiology, Pathology, Pharmacology, Physiology and Respiratory Virology. These Departments are headed by the Faculty Members in the respective fields. The General and Personnel Management including various maintenance activities required for the Institute are supported by administrative services of the Institute, controlled by the Deputy Registrar who reports to the Director.



Inauguration of VPCI Post Covid Respiratory Management Center by Prof. PC Joshi, Honorable Vice Chancellor, Delhi University on May 24, 2021.

GOVERNING BODY

CHAIRMAN

The Vice-Chancellor, University of Delhi
(Ex-Officio) or a person nominated by him

Prof. V.S. Chauhan

Former Director
ICGEB, Jawaharlal Nehru University
New Delhi-110067

MEMBERS

Treasurer, University of Delhi (Ex-Officio)

Prof. Kavita Sharma

Two members nominated by the Executive
Council, University of Delhi

Prof. Mahesh Verma

Prof. Neeta Sehgal

Dean, Faculty of Medical Sciences,
University of Delhi

Prof. A.K. Jain

Three members nominated by the Ministry of
Health and Family Welfare, Government of India,
New Delhi

Shri Sanjay Kumar

Additional Secretary and Financial Advisor

Smt. Vandana Jain

Joint Secretary

Dr Sunil Kumar

Director-General of Health Services

One member, not connected with the
University, nominated by the Executive
Council, University of Delhi

Prof. Randeep Guleria

Director, All India Institute of Medical
Sciences, New Delhi – 110 029

One Professor of the Institute by rotation
according to seniority for a period of one year

Prof. Kavita Gulati (03.11.2022)

Prof. Anita Kotwani (till 02.11.2021)

One Associate Professor or Assistant Professor
of the Institute by rotation according to seniority
for a period of one year

Dr Parul Mrigpuri (till 02.11.2021)

Dr Jayeeta Bhadra (03.11.2021 onwards)

Representative of Non-teaching Staff
of the Institute by rotation (as Special Invitee)
according to seniority for a period of one year

Shri Satish Kumar (till 28.02.2022 onwards)

Shri Vinay Kumar (01.03.2022 onwards)

MEMBER-SECRETARY

Director, Vallabhbhai Patel Chest
Institute, University of Delhi, Delhi (Ex-Officio)

Prof. Raj Kumar

Director, VPCI

Standing Finance Committee

Additional Secretary and Financial Advisor

Ministry of Health and Family Welfare
Government of India
Nirman Bhawan
New Delhi-110 001

Chairman

Joint Secretary or Nominee

Ministry of Health and Family Welfare
Government of India
Nirman Bhawan
New Delhi-110 001

Member

Prof. B.K. Menon

Director-Professor
Department of Pulmonary Medicine
V.P. Chest Institute
University of Delhi, Delhi -110 007

Member

Joint Registrar/Deputy Registrar

V.P. Chest Institute
University of Delhi,
Delhi-110 007

Member

Director

V.P. Chest Institute
University of Delhi,
Delhi-110 007

Member-Secretary

Scientific Advisory Committee

Dr. D. Behera

Department of Pulmonary Medicine
Post Graduate Institute of Medical Education and Research
Chandigarh - 160 012

Chairman

Deputy Director-General (Medical)

Ministry of Health and Family Welfare
Government of India
Nirman Bhavan
New Delhi-110001

Member

Principal

University College of Medical Sciences (UCMS)
Delhi-110095

Member

Director

National Institute of TB and Respiratory Diseases
Sri Aurobindo Marg, New Delhi-110030

Member

Dean, Faculty of Science

University of Delhi, Delhi-110007

Member

Dean, Faculty of Medical Sciences

University of Delhi, Delhi-110007

Member

Prof. Madhu Khanna (Basic Science)

Respiratory Virology Unit
Department of Microbiology
Vallabhbhai Patel Chest Institute
University of Delhi, Delhi-110007

Member (One year w.e.f. 26.03.2021)

Dr Nitin Goel (Clinician)

Department of Pulmonary Medicine
Vallabhbhai Patel Chest Institute
University of Delhi, Delhi-110007

Member (One year w.e.f. 26.03.2021)

Prof. Anant Mohan

Professor and Head
Department of Pulmonary Medicine,
Critical Care and Sleep Medicine
3rd Floor, Near SBI Bank
All Indian Institute of Medical Sciences
Ansari Nagar,
New Delhi-110 029

Member

Director

V.P. Chest Institute
University of Delhi, Delhi-110007

Member-Secretary

Human Ethics Committee

Dr D. Behera

Department of Pulmonary Medicine
Post Graduate Institute of Medical Education and Research
Chandigarh - 160 012

Chairman

Prof. B.D. Banerjee

Department of Biochemistry
University College of Medical Sciences (UCMS)
Shahdara, Delhi-110 095

Member (Basic Medical Scientist)

Prof. Kavita Gulati

Department of Pharmacology Vallabhbhai Patel Chest Institute
University of Delhi, Delhi-110 007

Member (Basic Medical Scientist)

Prof. Anant Mohan

Professor and Head
Department of Pulmonary Medicine
All Indian Institute of Medical Sciences
New Delhi - 110 029

Member (Clinician)

Prof. Balakrishnan Menon

Department of Pulmonary Medicine Vallabhbhai Patel Chest Institute
University of Delhi, Delhi-110 007

Member (Clinician)

Shri K Sunil

K Sunil and Associates, Advocate and Advisors
Chamber NO 69, C L. Josef Block, Tis Hazari Court
New Delhi-110 054

Member (Legal)

Shri Suman Kumar

Advocate, Hight Court of Delhi
New Delhi

Member (Social Scientist, w.e.f. 26.03.2021)

Dr Udhay K. Sinha

Institute of Human Behaviour and
Allied Sciences (IHBAS), Dilshad Garden
Delhi-110 095

Member (Philosopher)

Director

V.P. Chest Institute
University of Delhi,
Delhi-110 007

Member-Secretary

Institutional Animal Ethics Committee

Chairman

(Biological Scientist)

Prof. Malini Shariff

Head, Department of Microbiology
V.P. Chest Institute
University of Delhi, Delhi-110 007

Member

(Scientist from Different Discipline
of the Institute)

Prof. Mandira Varma-Basil (28.3.2018 onwards)

Department of Microbiology

Member

(Scientist from Different Discipline
of the Institute)

Prof. Madhu Khanna

Department of Virology

Member

(Scientist Incharge of Animal House
Facility of the Institute)

Prof. Kavita Gulati (28.03.2018 onwards)

Department of Pharmacology

Main Nominee of CPCSEA**Dr Harmeet Singh Rehan** (28.03.2018 onwards)

Head, Department of Pharmacology
Lady Hardinge Medical College
New Delhi-110 001

Link Nominee of CPCSEA**Dr Bal Gangadhar Roy** (28.03.2018 onwards)

EFA, Institute of Nuclear Medicine and
Allied Sciences Delhi-110 054

Nominee of CPCSEA

(Scientist from Outside the Institute)

Dr H.B. Singh (28.03.2018 onwards)

Ministry of Science and Technology,
New Delhi-110 001

Nominee of CPCSEA

(Non-Scientific Socially Aware Member)

Dr S. Gowri Shankar (22.07.2020 onwards)

-702, Gayatri Apartments, Sector 10
Dwarka, New Delhi-110 075

Member-Secretary

(Veterinarian of the Institute)

Dr Rajinder Bajaj

ORGANISATIONAL STRUCTURE

DIRECTOR

Raj Kumar, MD (Pul. Med.), FAMS, MNASc, MNAMS, FICAAI, FICS, FNCCP(I), FIAMS

Biochemistry (including Clinical Biochemistry)

Vishwajeet Rohil, MD
Professor

Jayeeta Bhadra, MD
Assistant Professor

Biostatistics

Ravishankar N., PhD
Assistant Professor

Microbiology (including Medical Mycology and Respiratory Virology)

Malini Shariff, MD, PhD
Professor

Mandira Varma-Basil, MD, DNB
Professor

Anuradha Chowdhary, MD
Professor

Madhu Khanna, MSc, PhD
Professor

Pathology

Ritu Kulshrestha, MS (Biomedical Sciences), DNB (Pathology), PhD, MNAMS
Professor

Pharmacology

Anita Kotwani, MSc, PhD
Professor

Kavita Gulati, MSc, PhD
Professor

Physiology

Vishal Bansal, MD, DNB, PhD, MNAMS, FCCP (USA)
Professor

Pulmonary Medicine

Raj Kumar, MD (Pul. Med.), FAMS, MNASc, MNAMS, FICAAI, FICS, FNCCP(I), FIAMS

Professor

Balakrishnan Menon, MD, DMRD

Professor

Nitin Goel, MD

Assistant Professor

Sonam Spalgais, DNB

Assistant Professor

Parul Mrigpuri, DNB

Assistant Professor

Siddharth Raj Yadav, MD

Assistant Professor

Rajnish Kaushik, DM

Assistant Professor

Viswanathan Chest Hospital

Officer-in-Charge

Raj Kumar

Professor

Library

Uma Tyagi, MPhil (Physics), MLib Sci, PhD

Librarian

Animal House

Rajinder Bajaj, BVSc and AH

Consultant (Animal House)

Administration

Omkar Nath Pandit, MA (History), MA (Pol. Sci.), PGDHR, DLL&LW, MBA (HRM)

Deputy Registrar

Viswanathan Chest Hospital

The Viswanathan Chest Hospital (VCH) attached to the Vallabhbhai Patel Chest Institute has the following Departments/Facilities to provide specialised investigations and treatment to patients referred to this Institute.

Clinical Facilities

The Viswanathan Chest Hospital (VCH), formerly known as Clinical Research Centre, is the hospital wing of the Institute with the following Departments:

- Pulmonary Medicine
- Radiodiagnosis and Imaging
- Clinical Laboratories of Biochemistry, Microbiology and Pathology
- Anaesthesia
- Thoracic Surgery

Facilities available at Viswanathan Chest Hospital

- Out-patient Department
- In-patient Facility with 128 Beds
- 24 Hours Respiratory Emergency
- 8-bedded Respiratory Intensive Care Unit (with 6 Ventilators)
- Pulmonary Function Laboratory
- Cardio-pulmonary Rehabilitation Clinic
- Sleep Laboratory
- Allergy and Applied Immunology Laboratory
- Clinical Hematology and Pathology Laboratory
- Clinical Biochemistry Laboratory
- Microbiology Laboratory
- Radiology Unit with 64 Slice MDCT Scan Center
- Picture Archiving and Communication Systems (PACS)
- Tobacco Cessation Clinic
- Yoga Therapy and Research Centre

Specialized investigations available at VCH

- Fibreoptic bronchoscopy
- Guided FNAC/Biopsy
- Medical thoracoscopy
- Respiratory allergy skin tests
- Clinical immunology
- BACTEC system for tuberculosis

Detailed data of patients attending VCH and investigations conducted during the period are as follows:

Number of new patients attending OPD	14657
Number of follow up patients visiting OPD	34010
Total Outdoor Patients	48667
Number of indoor patients	
General Wards	10415
Emergency Wards	1787
Total Indoor Patients	12202
Emergency treatment provided	18666
Total number of patients treated in ICU	1568
Number of routine and specialised investigations done at VCH during the year	
Arterial blood gases	23738
Bronchoscopy	199
Bronchoalveolar lavage	148
Pulmonary function tests	2990
CT scans	1460
Ultrasounds	0
X-rays	25543
Electrocardiogram	2905
Polysomnograms	0
HIV testing	2531
Skin tests	11168
Serum IgE test performed	4020
ANA	0
c-ANCA	0
p-ANCA	0
SCL-70	0
HBsAg	2562
HCV	2302
Serum ACE	669
Vitamin D	0
Thyroid Profile	0
Biochemistry Tests (Blood and Pleural fluid): Patient care	
Blood glucose	2500
Liver function tests	3379
Kidney function tests	6984
Pleural fluid biochemistry	166
HbA1c	1274
Lipid profile	1415
Total	62738

Microbiology

1. Bacteriology Laboratory

Clinical specimens processed for isolation and identification of aerobic pathogens

Nature of Specimen

Sputum	3280
Urine	488
Bronchial aspirate/ lavage	129
Pleural fluid	66
Blood	391
Endotracheal aspirate	134
Pus/(FNAC/Tips)	55
Curtain swab	2
Total	4545

2. Serology Laboratory

Rheumatoid factor	592
C-reactive protein	912
Widal	05
Total	1509
Hospital Surveillance Samples	88

3. Anaerobic Culture

4. Mycobacteriology Laboratory

Nature of Specimen

	LJ medium	MGIT	GeneXpert
Sputum	4900	72	1892
Bronchial aspirate	340	23	430
Pleural fluid	164	21	229
ET aspirate	53	20	60
CSF	8	—	4
Pus/Biopsy	30	12	64
FNAC	24	14	36
Gastric aspirate	18	2	18
Total	5537	164	2773

Drug susceptibility test (DST) for M. tuberculosis: 150

Line probe assay: Molecular DST for M. tuberculosis

Line probe assay for firstline drugs: 52

Line probe assay for *Mycobacterium sp.* 25

Parasitology

Test for filarial antigen: 10

5. Mycology (VPCI and other hospitals)

Nature of Specimen	
Sputa	3548
Blood specimens	1393
Bronchial lavage/aspirate/washings/endotracheal aspirate/pleural fluid	272
Blood culture	139
Tissue biopsies/ nasal polyps/skin scrapings/nail scrapings	163
CSF	17
Urine and Miscellaneous (swabs/nasal polyp/ FNAC/discharge/pus)	512
Total	6044
<i>Besides, referral service for identification of clinical isolates of fungi was extended to other institutions on request.</i>	

Pathology

1. Hematology Laboratory

Hemogram (including Hb, TLC, DLC)	14652
Platelet count	14644
Absolute eosinophil count	2875
Peripheral smear	130
P/S for malarial parasite	09
ESR	710
Total	33,020

2. Coagulation Laboratory

A total of 2419 coagulation tests were done during the period as per details given below;

Bleeding time, Clotting Time (BT, CT)	24
Prothrombin Time (PT)	976
Activated Partial Thromboplastin Time (APTT)	905
D-Dimer	514

3 Clinical Pathology Laboratory

Total of 589 urine analysis were done during the period, including specific gravity, pH, albumin, sugar, microscopic examination and ketone bodies.

4. Histopathology Laboratory

Lung biopsy- TBLB and EBLB, Lung mass	97
CT guided Trucut Biopsy	35
Pleural biopsy	02
Cell block	30
Experimental lung Biopsy	24
Total	188

5. Cytopathology Laboratory

Sputum	490
BAL fluid	111
FNAB: Percutaneous	41

Transbronchial (TBNA)	14
Bronchial aspirate	21
Pleural fluid	199
Tracheal aspirate	03
Pus cytology	02
CSF	03
Bronchial Brush	03
Ascitic fluid	02
Total	889

6. Immunohistochemistry was done on Lung biopsies -(TBLB, EBLB, VAT, Tru-cut)/Cell block (Pleural fluid, BALE, FNAB, Sputum)/Fine needle aspiration biopsy (FNAB) (n= 277) using automated immunohistochemical stainer.

Immunohistochemistry	No of Cases
Panck	54
CEA	18
EMA	40
Calreterin	01
WT-1	01
TTF-1	17
SPC	07
ALK	18
PDL-1	20
P40	48
Synaptophysin	8
CGA	8
vimentin	33
CK-20	8
FGFR-1	50
FGFR2	46
CD8	02
CK-7	07
CD-45	11
KRAS	01
SPA	08
NSE	03
CD68	19
S-100	03
CD-133	38
NFK-b	11
Caveolin	30
CD-4	04
CD-8	04

TGF-b	33
VEGF	29
HIF	22
FLK	22
bFGF	35

7. Molecular Pathology Laboratory

Total 21 molecular tests were performed on lung biopsies -(TBLB, EBLB, VAT, Tru-cut)/Cell block (Pleural fluid, BALF, FNAB, Sputum)/Fine needle aspiration biopsy (FNAB) using RT-PCR and Sanger Sequencing techniques.

qRT-PCR tests	Number
BRAF	21

8. Cell Culture Laboratory

The cell culture laboratory was continued during this period. Research work on the A549 human alveolar epithelial, THP-1 and U-937 cell line is presently being performed. The TGF- β , SMAD-1-7, MTT assay, cell scratch assay and migration assay are being studied by immunocytochemistry and real time PCR.

9. Nanoparticle Laboratory

The polymeric nanoparticles are being synthesized followed by their surface modification and characterization using; transmission electron microscopy, DLS, Zeta potential, NMR, FTIR and HPLC techniques and studying their functionalization in the context of their surface modifications.

Tobacco Cessation Clinic

Tobacco cessation clinic (TCC) was established at the Vallabhbhai Patel Chest Institute in November, 2001. The activities of TCC were expanded in the year 2002 with the financial support from the World Health Organization (WHO) and Ministry of the Health and Family Welfare, Government of India to make it a more comprehensive programmed Centre. Further, the TCC was upgraded in the year 2009 as Resource Centre for Tobacco Control. The tobacco related deaths and suffering from the diseases caused by tobacco consumption has raised the question that what should be done to protect the people from the trap of vicious circle of tobacco addiction.

The Institute's Tobacco Cessation Clinic has been providing its services since 2001 in the outpatient department at hospital wing from Monday to Friday from 9:00 am to 5:00 pm to the tobacco users. The services are offered at the clinic in the form of Counselling, NRT (nicotine replacement therapy), non-NRT including CoHb monitoring, quitdate plan follow-up, telephonic follow-up and pulmonary function test. The clinic is also trying to create awareness among the general public and OPD patients about the negative effects of tobacco and about tobacco cessation through power point presentation, booklet, and videos. Registered person will be called for regular follow up at 2weeks followed by 1 month, 2 months, 3 months, 6 months and 1 year.

Moreover, Tobacco Cessation Clinic conducts workshops regularly in different parts of Delhi and NCR to train the physicians, counsellors, volunteers and other stake holders involved in smoking cessation. Since its inception, TCC has conducted 55 educational programmes for physicians, para-medical professionals and general public. TCC supplies educational materials in the form of booklets, pamphlets, stickers, etc, for physicians and general public. Since the inception of TCC to 31st March, 2022, 8709 new tobacco users and 3609 follow-up tobacco users have availed the services. 97 new and 22 follow-up subjects visited TCC for tobacco cessation from 1st April, 2021 to 31st March, 2022. Number of registered subjects and follow up subjects is less compared to previous years due to covid-19 pandemic.

Total new subjects registered for TCC from 1st April, 2021 to 31st March, 2022	97
Number of subjects set a quit date	93 (95.88%)
Number of subjects followed up	22
Telephonic routine follow up	300+
Number of subjects medication prescribed	1
Number of subjects Quitted with medication	0
Subject contacted	57 (58.76%)
Total Number of quitters (n=57)	32 (56.14%)

During 1st April, 2021 to 31st March, 2022, 32 subjects quitted their tobacco habit for at least 1 month. Follow upcalls were made to 97 subjects (Tobacco users) registered in this duration to access their present quitting status, out of these 57 (58.76%) subjects were connected and the remaining 20 (41.24%) calls could not be connected due to reasons such as switched off, person not available, expired, call not answering, out of station, caller busy, number does not exist, phone dead, did not turn up for follow up due to covid-19 lockdown, etc. A total of 32 Subjects have quitted their tobacco habit with the sessions of behavioral counselling alone.

The continuous abstinence rates among the 32 subjects at 1 month, 3 months, 6 months, 9 months and 12 months were 56.14%, 42.86%, 27.2%, 26.67% and 33.33% respectively. (Table 2)

Abstinence Rate	Subjects	(%)
1 month abstinence rate (n=57)	32	56.14
3 month abstinence rate (n=49)	21	42.86
6 month abstinence rate (n=37)	10	27.02
9 month abstinence rate (n=15)	4	26.67
12 month abstinence rate (n=3)	1	33.33

Yoga Therapy and Research Centre

The Yoga Therapy and Research centre conducts yoga classes in collaboration with the Morarji Desai National Institute of Yoga (MDNIY), New Delhi from Monday to Friday during 8 AM to 4 PM at VPCI.

Yoga training classes are conducted in different batches namely general group class from 8 AM to 9 AM, Therapy Class from 11 AM to 12 PM and VPCI Staff class is conducted from 1 PM to 2 PM. Different Yoga practices are taught to heal the diseases of patients.

Yoga sessions are specially designed for the management and eradication of different health disorders like bronchial asthma, hypertension, stress, obesity etc. The patients first report to yoga OPD at VPCI during 9 AM to 3 PM, Monday to Friday. Doctors and Yoga staff record the case history of the patient and necessary counselling is given by the yoga ARO. Then the patient is advised to undergo yoga training and educational session according to individual health problems for a particular period till the healing of the disease. The patient is re-examined to note the improvement made by him/her by the yoga therapist. Then the patient is advised for a regular home programme with an advice to attend the training sessions once or twice a week at the Yoga Centre for better health and quality of life and to keep them healthy. Special Yoga sessions for staff of VPCI are also arranged on a regular basis.

During covid-19 pandemic, online classes were conducted and follow ups were done for patients telephonically. They were advised to report the improvements once in a week through phone.

7th International Yoga Day in Virtual mode

VPCI celebrated "7th International Day of Yoga" in collaboration with Morarji Desai National Institute of Yoga on a Virtual Mode on June 21, 2021. The Students, Faculty members & Staff performed yoga with on theme "Be with Yoga, Be at home" for building immunity and relief from stress and also online pledge "I Pledge to make Yoga an Internal part of my daily life" was taken.



Celebration of 7th International Yoga Day in Virtual mode at VPCI, June 21, 2021

Cardio-Pulmonary Rehabilitation Clinic

Cardio-pulmonary Rehabilitation Clinic (Monday to Friday: 9 AM to 1 PM)

Cardio-Pulmonary Rehabilitation Clinic:

Cardio-Pulmonary Rehabilitation Clinic at Vishwanathan Chest Hospital, VPCI is involved in management of chronic respiratory patients who have disability in activities of daily living and exercise limitation due to shortness of breath despite being on optimal pharmacological treatment. Due to COVID-19 Pandemic, the clinic functioned intermittently as per the government guidelines and therefore, numbers of patients were restricted during this duration.

Clinic Timings: Monday to Friday: 9.00 A.M. to 1.00 P.M.

Numbers of patients attended in Cardio-Pulmonary Rehabilitation Clinic: (1st April, 2021 - 31st March, 2022)

Breathing retraining & education : 133

Enrolled for Supervised Rehabilitation program : 18

(Intensive & Maintenance)



Training Course on Pulmonary Rehabilitation March 9-10, 2021

Division of Sleep Medicine

Division of Sleep Medicine

Sleep Disorders and Sleep Therapy is a cross-disciplinary area concerned with the psychological and physical health conditions related to sleep disorders and conventional and advanced sleep therapies.

VPCI started the Division of Sleep Medicine in 1999. There has been dramatic growth in clinical activity. The number of patient visits has increased approximately five-fold from fiscal year 2002 to the present. It caters to the need of all in-patients & out-patients with three diagnostic machines functioning.

The Division is managed by experienced staff under the headship of Prof. Raj Kumar and we provide a broad range of studies: overnight sleep studies, split overnight sleep study, WatchPAT diagnostic sleep study, OSA screener and auto CPAP.

The mission at the Sleep Division is to provide comprehensive diagnostic evaluation to individuals having symptoms occurring during sleep or while awake and management of respiratory patients of age 18 yrs and above. Technical staff of the Sleep Medicine Division are fully equipped with knowledge required for sleep studies.

VPCI has trained technical staff dedicated to the diagnosis and treatment of sleep/wake disorders in adults and develop research to lead to a better understanding of normal and abnormal sleep.

The expanded Sleep Medicine Division, located on the first floor of the Vishwanathan Chest Hospital building is 338 square feet in size and has one bed, which is dedicated to research also. The Sleep Division is spacious enough for patients to spend the night and has attached private bathroom with shower. The Division is equipped with new, state-of-the-art equipment and it continues to cater to a wide variety of sleep complaints.

Past clinical research projects include "Prevalence of Obstructive sleep apnea syndrome in Delhi, India"; "A study of sleep-related breathing disorders in chronic obstructive pulmonary disease patients with or without cor-pulmonale"; "Obstructive sleep apnoea, oxidative stress and renal function"; "Obstructive sleep apnoea, oxidative stress and liver function"; "Role of some inflammatory markers in obstructive sleep apnoea: effects of grape seed extract".

Clinical care for the full spectrum of sleep disorders is provided by the outpatient practices.

The Division at present has the following aims and objectives: (1) to provide exceptional health care and support through quality service to all patients with sleep disorders and (2) to conduct high quality research related to sleep disorders (with emphasis on local disease and disorders).

Evaluation and Treatment Options

- CPAP/BiPAP, Mask fitting/Desensitization
- Sleep consultation/Evaluation/ Sleep Counseling
- Sleep studies
- Polysomnography (Includes: EEG, EOG, chin and leg EMG, respiratory monitoring, oxygen saturation, and EKG)
- CPAP titration
- WatchPAT sleep study.
- Split night polysomnography

Research in Sleep Medicine Division

Research activities continued to be a major part of the Institute from the year 2002 onwards. Thirteen Scientific papers were written and published in national and international medical meetings and journals from this Division.

Multidisciplinary Research Unit

The MRU at Vallabhbhai Patel Chest Institute, approved by Department of Health Research, Govt. of India is functional since 2015-16. The MRU at VPCI is actively involved in various research activities since its inception. The MRU is a part of the Government of India initiative for establishment of multi-disciplinary research units in Government medical colleges/research institutions during the 12th Plan period.

The VPCI-DHR-ICMR-Multi-disciplinary research unit (MRU) focusses on research in non-communicable diseases and other need-based research employing newer tools and promotes and encourages quality medical research in the institution. The Local/extended Research Advisory Committee (LRAC/ERAC) is responsible for approving the research proposals received from various departments of the Institute and subsequently monitors their progress. The committee is constituted of Prof. Anant Mohan (Dept. of Pulmonary Medicine, AIIMS, New Delhi) as the Chairperson; Prof. Anil Gurtoo (Dept. of Medicine, LHMC) as the co-chairperson. Dr Geetika Yadav, (Scientist- E, ICMR) is the nominee of DHR and Prof. B.D Banerjee (Dept. of Biochemistry, UCMS) is the external member in the LRAC of VPCI. Dr Nitin Goel and Dr Sonam are the internal members and Dr Kavita Gulati is the Member Secretary, Nodal Officer of MRU. The Multidisciplinary Research Unit (MRU) is actively involved in various research activities viz. participation in the workshop, meetings with Department of Health Research (DHR), approval of new research proposals, etc. to meet the goals of empowering medical research. All the vacant posts i.e. Research Scientist-I (Dr. Savita Devi), Research scientist-II (Dr. Vikas Kumar), Laboratory technician (Ms Sanjana Tusham) and Lab Assistant (Mr. Vinay Patel) on contract basis were filled during 2021-2022.

Following Ten Research Projects are ongoing in the MRU:

1. Synthesis of polymeric nanoformulation encapsulated with chemotherapeutic agents for lung cancer treatment. 2019-2022.
2. Exploring the potential of G-Quadraplex- Targeting nanoparticle (GQNP) conjugate in lung cancer 2019-2022.
3. Pharmacological studies to evaluate the anti-inflammatory and immunomodulatory effects of Hibiscus Rosa-Sinesis and piper nigrum and their cellular and molecular mechanism of action in experimental models of bronchial asthma. 2019-2022.
4. Pharmacological studies to evaluate the anti-inflammatory and immunomodulatory effects of *Aerva lanata* Linn. In experimental models of bronchial Asthma and the cellular and molecular mechanism. 2019-2022.
5. Comparison of nutritional assessment and work productivity and quality of life in smokers and nonsmokers cases of COPD. Nov, 2021- Mar, 2023.
6. Prevalence of frailty in chronic obstructive pulmonary disease and its correlation with disease severity and quality of life. Nov, 2021- Mar, 2023.
7. Normal level of FENO in healthy adult population of Delhi NCR. Nov, 2021- Mar, 2023.
8. Effects of nitric oxide modulator on airway inflammation, bronchial hyper-responsiveness and oxidative stress in experimental model of bronchial asthma. 2021-2023.
9. Comparative evaluation of anti-oxidative potential and compositional analysis of extract from *Aerva lanata* (Linn.) withaniasomnifera and Hibiscus Rosa-sinesis. 2021-2022.
10. Experimental studies on the effect of UNIM-52, a polyherbal unani formulation, on pulmonary fibrosis and its mechanism. 2021-2024.



Research Scientist-I (01), Laboratory technician (02) and Lab Assistant (01) with Nodal Officer at MRU-VPCI during August, 2021

National Centre of Respiratory Allergy, Asthma and Immunology

The National Centre of Respiratory Allergy, Asthma and Immunology (NCRAAI) was inaugurated and dedicated to service on February 12, 2011 by Prof. P.N. Tandon, Chairman, Governing Body of the Institute and the President, National Brain Research Centre Society, Gurugram, in presence of Prof. Raj Kumar, Professor and Head, Department of Respiratory Allergy, Asthma and Applied Immunology, VPCI, Delhi. The aim of the Centre is to conduct research and training on various aspects of allergy and asthma (aetiopathogenesis, diagnosis and treatment).

VPCI-Pollen Count Station

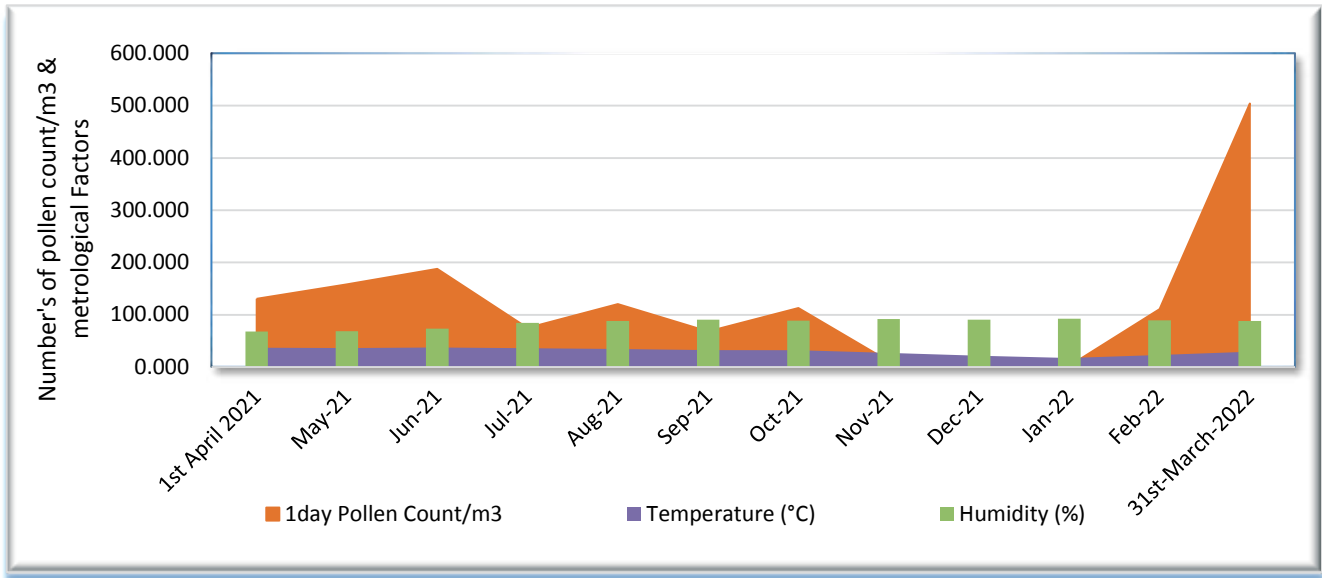
The pollens count station was established at the roof of the VPCI multi-storeyed building, in which two "Burkard Air Samplers" have been installed, one is seven days sampler and the other is one-day sampler. Both the samplers are running continuously and air samples are collected and studied on a daily bases. The details of work done during the period is given below:

The total number of slides mounted and analysed during the period 1st April 2021 to 31st March 2022 is 730, out which 365 were seven day's slides and 365 were one day slides. A total of 5978 slides have been mounted in the pollen count station since the establishment of pollen count station up to March 31, 2021 (3137 seven day's slides and 2841 one-day slides).

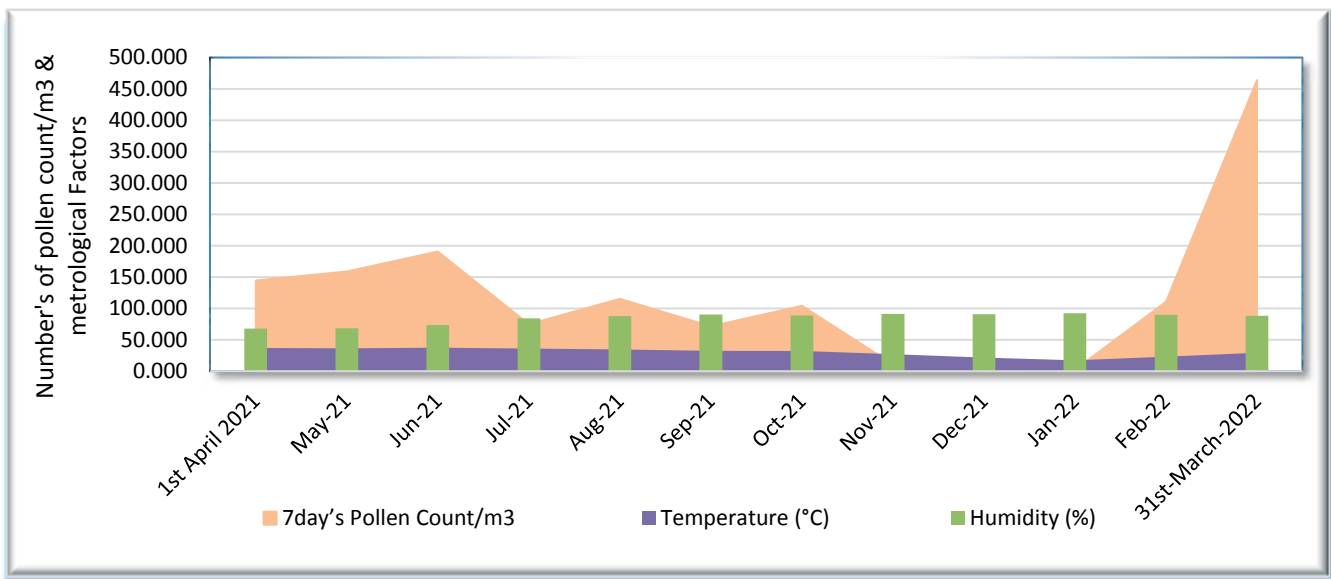
Table 1. Month wise mean Pollen's Count/m³, Temperature & Humidity during 1st April 2021- 31st March 2022

Years 2021-2022	1day Pollen Count/m ³	7day's Pollen Count/m ³	Humidity (%)	Temperature (°C)
1st April 2021	130.667	144.767	68.033	37.043
May-21	158.355	159.000	68.581	36.416
Jun-21	187.967	190.833	73.767	37.457
Jul-21	74.903	74.935	84.484	36.077
Aug-21	120.552	115.500	87.968	34.619
Sep-21	68.233	71.667	90.433	32.443
Oct-21	113.000	104.322	88.742	32.250
Nov-21	11.433	11.066	91.600	27.117
Dec-21	2.419	1.581	90.645	21.684
Jan-22	2.419	2.452	92.258	17.374
Feb-22	110.857	110.857	89.607	23.136
31st-March-2022	504.354	464.387	88.29	29.403

*IARI Metrological Database System Division of Agricultural Physics, IARI, New Delhi IARI: Latitude 28°38'23"N, Longitude:77°09'27"E., Altitude:228.61m above were used to calculate the mean of the minimum and maximum temperatures (°C) for weather monitoring stations within IARI, New Delhi



1 day pollen count/m³ month wise mean from 1st April, 2021 to 31st March, 2022



7 day's pollen count/m³ month wise mean from 1st April, 2021 to 31st March, 2022

National Tobacco Quitline Services

The NTQLS is India's first telephonic counseling-based service sponsored by the Ministry of Health & Family Welfare Government of India. The department is working successfully since May 2016 at the Vallabhbhai Patel Chest Institute University of Delhi, under the supervision and guidance of Prof. Rajkumar, Director, VPCI. The NTQLS was established with the aim of reaching out to the masses and provide confidential and quality counseling services all over India. This service can be easily accessed six days a week, through a toll-free number 1800112356 from 8 AM to 8 PM.

During the period of 1st April 2021 – 31st March 2022, the total number of calls landed on the Interactive Voice response (IVR) was 1363955. The total number of inbound calls during this period was 294231, whereas, the total number of outbound calls was 771162. In this period a total number of 102100 callers were registered who were provided counseling and 33894 were quitters. The success rate of National Tobacco Quitline Service during this period is 33.19%.



NTQLS work station



NTQLS staff with Shri Ashwini Kumar Choubey, former Hon'ble Minister of State for Health and Family Welfare, Government of India

E-Hospital Services

Dr. Vishal Banbsal (Nodal Officer) and Mr. Sunil Kumar (Technical-in-Charge) were responsible for implementing E-hospital and associated modules at the Institute as per directions of Ministry of Health and Family Welfare, Government of India.

These modules include:

1. E-hospital : Phase-I (Patient registration and Billing)
2. ORS : Online Registration System
3. Mera Aspaatal : Patient feedback services
4. Digital Payment: Promotion of digital payment services



E-hospital login page



Dashboard of E-hospital

Telemedicine Services

Telemedicine a term framed in the 1970s, which literally means “healing at a distance”. It signifies the use of information communication technology (ICT) to improve patient outcomes by increasing access to care and medical information. Telemedicine is being run in VPCI from PEC room no 26 in hospital block, from 2.30 PM – 5.00 PM. Doctors on duty use land line telephone, mobile phone and video call via whatsapp to communicate to patients who are unable to attend OPD due to various reasons such as old age, transportation issues, living in far-flung areas and covid restrictions.

Total of 723 patients were benefited during the period of 1st April 2021 to 31st March 2022.



Telemedicine services at VPCI



Animal House

The Animal House of the Institute is registered for breeding and experiment on animals with Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), Animal Welfare Division, Government of India, for breeding and conducting experiment on small Laboratory Animals vide registration no. 170/GO/ReBi/S/99/CPCSEA. All experiments involving animals are approved by the Institutional Animal Ethics Committee (IAEC), constituted by CPCSEA. IAEC keeps a check to promote the humane approach of animal experimentation with the basic objective of providing specifications that will enhance animal care and quality in the pursuit of advancement of scientific knowledge that is relevant to humans and animals.

The Animal House of the Institute provides optimum environment for experimental animals, which is essential for obtaining reliable experimental research. The Animal House of the Institute is being maintained under controlled environment conditions as specified in CPCSEA guidelines with maintained temperature, relative humidity, timer controlled light dark cycle and air change per hour with 100% fresh air.

The Animal House is managed by a team of well qualified Veterinarian, Technical Assistant and Attendants who are experienced and trained in modern methods of animal care, breeding and husbandry.



Library

The VPCI Library is providing patient care information support and catering to the academic needs of the faculty members, resident doctors, researchers and students alike for research purposes. It forms a part of Institute support services and acquires thought process, collate and disseminates global information in the field of Biomedical Sciences with specialization in pulmonary diseases and allied sciences. The library was started in 1955, but it has back volumes of several journals more than 100 years old. Most of the journals have complete sets of volumes originating right from their treatises of medicine which are readily available for basic and historical insights. It also has a very good comprehensive collection of serial publications like Annual Reviews, Years books, Recent advances. The Institute has one of the best libraries in the field of Pulmonary Disease and Allied Sciences having 10134 Books, 25025 bound Journals, 177 CD's, 587 Thesis and 31 National and International Reports. A total 16 Journals (05 International and 11 National) are being received on exchange programme with the Institute's Journal and 02 Journals are received on complimentary basis. To cover the need for daily coverage of news related to the medical field, Library is also subscribing four English and four Hindi newspapers. This has encouraged the inculcation of reading habits of all alike.

Library renders its services not only to the Scientists/research scholars of the Institute, but also to other Colleges and Institutes of the University of Delhi. Institute is a member of National Level ERMED Consortium (e-journals) for the Calendar since the year 2018. ERMED Consortium subscribed 239+ e-journals from five publishers. All e-journals are configured on Static IP / IP's of our Institute. Library initiates appropriate efforts from time to time to create awareness among staff, research scholars, students, etc. to enhance maximum utilization of e-journals through customised e-journals gateway <http://www.irmed.in> and benefit of access/download of articles from the "Cochrane Library". This is an initiative by "National Medical Library" which is a collection of six databases that contain different types of high-quality, independent evidence to inform healthcare decision-making, and a seventh database that provides information about Cochrane groups through single gateway <http://www.cochranelibrary.com>. Much emphasis is also laid on to provide abstracts, reference and specific information, if required. Apart from this, online searches are being carried out for providing instant access of Information Resources to the desktop of researchers through LAN (Local Area Network). The Internet services have been provided on the desktop of each Faculty Member through DUCC network /LAN and a separate leased line connectivity (VPCI) with 10 Mbps from MTNL. Library also provides inter-library loan facilities and reprographic services on demand.

The Library follows an open Access system. Library is equipped with modern information technology equipment's and continues to provide Internet/ e-mail services to the users to access CAS (Current Awareness Services) and SDI (Selective Dissemination of Information) services. These are provided to the users in the form of online/offline through e-mail and/or in print during the year. Library uses —LibSys 4.0|| Library Management Software, which is an integrated multi-user library management system that supports all in-house operations of the Library. The LibSys' consists of modules on acquisition, cataloguing, circulation, serials, article indexing and OPAC.

The Library facilities are available to Members/Users of Delhi University from Monday to Friday from 8:30 AM to 5:30 PM & on Saturday's from 9.00 AM to 5:30 P.M.

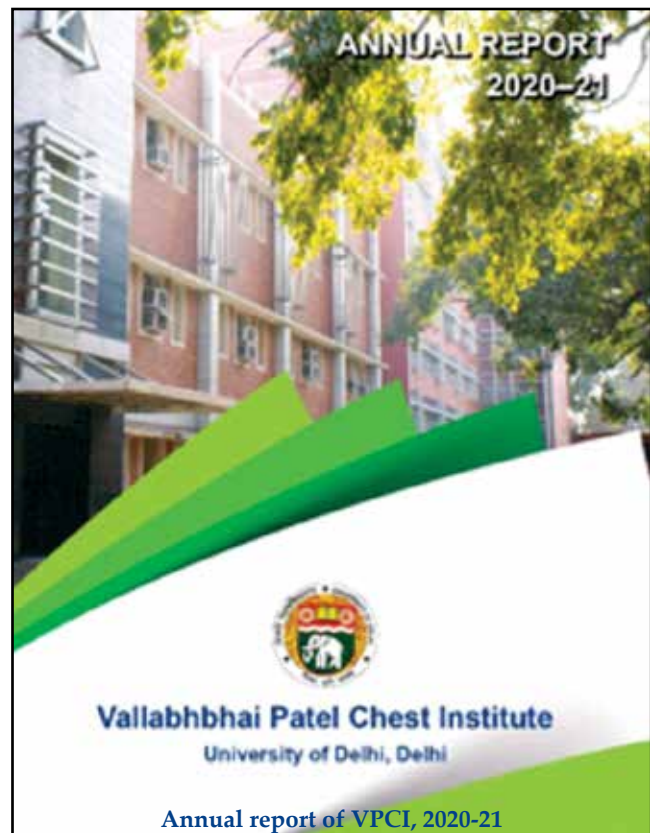
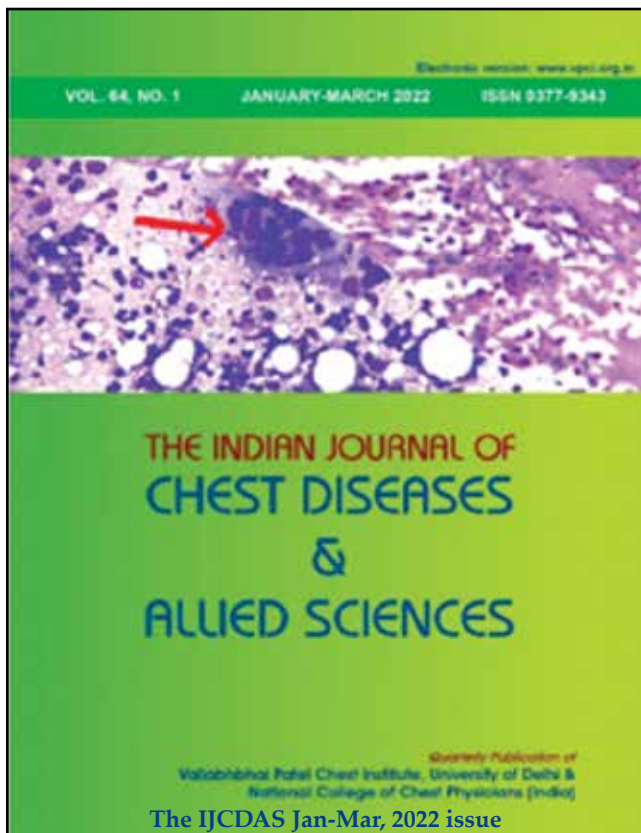
Publication Division

The Publication Division is entrusted with the responsibility of publishing the institute's journal "The Indian Journal of Chest Diseases and Allied Sciences (IJCDAS)" and Annual Report. The IJCDAS is published quarterly by the VPCI in association with the National College of Chest Physicians (India). The journal was founded in the year 1959 by (late) Prof. Raman Vishwanathan, Founder-Director of VPCI as an official publication of the VPCI and the Indian Association for Chest Diseases [renamed as National College of Chest Physicians (India) in 1976]. The journal was published as "Indian Journal of Chest Diseases" from 1959 to 1975 and it was renamed as "The Indian Journal of Chest Diseases and Allied Sciences" in 1976. Currently, Prof. Raj Kumar is the Editor-in-Chief of the IJCDAS.

The IJCDAS has a wide National and International circulation and it covers Clinical and Experimental work dealing with all aspects of Chest Diseases and Allied Sciences. It publishes Original Articles, Review Articles, Radiology Forum, Case Reports, Short Communications, Book Reviews. Many eminent scientists and clinicians have served as the Editors, Editorial Board Members and Reviewers of the journal and all of them have contributed immensely to the growth of the journal.

The hardcopy of the journal will be delivered to the subscribers across the globe through speed post. Full text articles published in the Journal (July-September 2003 onwards) can be also be accessed online at <http://www.vpci.org.in>. The recent issue of the IJCDAS is Vol 64, issue 1.

Annual report is a compilation of all major activities, events and research output of the institute.



DEPARTMENTAL ACTIVITIES

Department of Anaesthesiology & Critical Care

OUR MISSION- The delivery and promotion of pre-eminent intensive patient care and critical illness management through continued vigilance, innovation, and scholarship and provision of safe and innovative anaesthetic, analgesic to our day care patients.

OUR VALUES - Our values are the principles by which we guide our mission and reflect the values articulated by our university faculty and our core clinical institutions.

We cherish the following values:

Integrity;

- Commitment to innovation and excellence;
- Life-long learning and critical inquiry;
- Diversity and social justice;
- Partnership with our health science centres;
- Collaboration among disciplines, professions, and community;
- Support and collegiality;
- Accountability; and,
- Responsiveness to those whom we serve.

Specialized Procedures available at ICU, VCH

- Respiratory support
- Intubation /invasive mechanical ventilation
- Percutaneous tracheostomy for long term ventilatory assistance/ weaning
- Niv bipap

Hemodynamic supports

- CVP lines
- Arterial cannulations

Others

- Intercostal drains
- Bronchopulmonary toilet

Specialized investigations for critically ill patients available at ICU, VCH

- Fiberoptic bronchoscopy
- Bronchoscopy Guided FNAC/Biopsy
- Medical thoracoscopy

Total number of patients treated in ICU - 1568

Invasive mechanical ventilation - 450

NIV therapy given - 870

Percutaneous tracheostomy - 6

The Department shoulders the responsibility of online reporting of vacant and occupied ICU bed status on the website of SJH & VMMC as per order of Hon'ble High court.

We are going to start General Anaesthesia services in Operation Theatre for various procedures in the near future.

Biochemistry

(Including Biochemistry and Clinical Biochemistry)

Summary of the work done:

The Department of Biochemistry is actively involved in the teaching and guidance of postgraduate M.D. Medical Biochemistry and Ph.D. students, research and providing diagnostic services for patient care and is simultaneously providing summer training to the students of various other prestigious institutes.

Diagnostic Services:

- We are providing diagnostic services for admitted & outdoor patients of VPCI. Blood and pleural fluid samples are analyzed using fully automatic analyzers- Beckman Coulter AU480 and Dirui CS-T240. The total tests done for the period 01.04.21 to 31.03.22 were more than 60,000.

The following parameters are being tested in blood and pleural fluid samples of the patients:

Bl. Glucose, Bl. Urea, S. Creatinine, S. Total Protein, S. Albumin, S. Total Bilirubin, S. Direct Bilirubin, S. Alanine transaminase (ALT), S. Aspartate aminotransferase (AST), Alkaline Phosphatase (ALP), Total Cholesterol (CHOL-T), LDL Cholesterol (LDL-C), HDL Cholesterol (HDL-C), VLDL Cholesterol (VLDL-C), Triglycerides (TRIG), Glycated haemoglobin (HbA1C), and Pleural Fluid biochemical analysis including Pl. Fluid Total Protein and Pl. Fluid Glucose.

- Testing of five new parameters were launched during this period to cater to patient care needs. These are: S. Sodium, S. Potassium, S. Chloride, S. Calcium, S. Phosphorus, S. Uric acid.
- In our endeavor towards continuous quality improvement for better patient care, the diagnostic laboratory was enrolled in the NABL accredited proficiency testing provider for Clinical Biochemistry, CMC external quality assurance scheme, and successfully completed the participation for year 2021.

Research activities:

1. To elucidate the role of Ellagic acid and its derivative via Calreticulin Transacetylase in the gene expression profile of lung carcinogenesis

Human non-small cell lung cancer, lung adenocarcinoma A549 cell line was maintained using DMEM media in a biosafety cabinet under strict aseptic precautions. Transfected the cells with Human Calreticulin R (Cal R) gene. CRTAase transfected cells were treated with Polyphenolic acetate Ellagic acid peracetate (EAPA) along with HDAC inhibitors to induce histone hyperacetylation. Studied the effect of epigenetic modulation on the progression of lung tumor in vitro. Micro Array profiling of the cell line was performed before and after acetylation. We have customized the MicroArray Platform based on our RTPCR results. In the studies to elucidate the role of Ellagic acid and its derivative via Calreticulin Transacetylase in the gene expression profile of lung carcinogenesis, significant upregulation of Cyclin dependent kinase inhibitor 1A (p21Cip1) and Micro RNA31 (mir31) are observed in the transfected group treated with EAPA+VA above the transfected VA group which is indicative EAPA potentiates the effect of VA in transfected A549 cell line. (The final report of the project has been submitted to the Funding Agency)

2. Characterization of proteins differentially expressed in erythrocyte membrane in bronchial asthma

Identification and purification of one protein and its correlation with severity of the disease. In our study the erythrocyte membrane protein profile through LC/MS/MS, we have found the presence of 97 proteins consisting of ≥ 2 unique peptides. The abundance ratio of ≥ 1.5 or ≤ 0.67 had been considered to identify the proteins significantly upregulated or down regulated. 3 proteins were shown to be upregulated and 7 proteins downregulated. Besides, several PTMs (phosphorylation and acetylation) were also observed in 9 proteins. The PTMs and up/downregulation of these proteins are responsible for the dysregulation of the mechanical strength of rheological strength which may affect the delivery of oxygen to the lungs. The upregulation of GAPDH and PTMs and protein-protein interactions analysis showed that Glyceraldehyde 3 Phosphate Dehydrogenase plays an important role in glycolysis and in maintaining the balance between oxidant and antioxidant status

in asthma. We have demonstrated a significant correlation of GAPDH with airway obstruction on the basis of FEV1% and oxidative stress in asthma.

3. A study on CRHR1 and GR gene polymorphism and their correlation with the expression of various inflammatory cytokines in asthma in North Indian population

In this study on genetic polymorphism on CRHR1 and GR gene in asthmatics, we have observed the presence of twenty five SNPs in CRHR1 gene (including three novel SNPs reported for the first time in Indian population). Among these twenty five SNPs, sixteen were found to be significantly associated with asthma. One SNP in GR gene is found to be significantly associated with asthma.

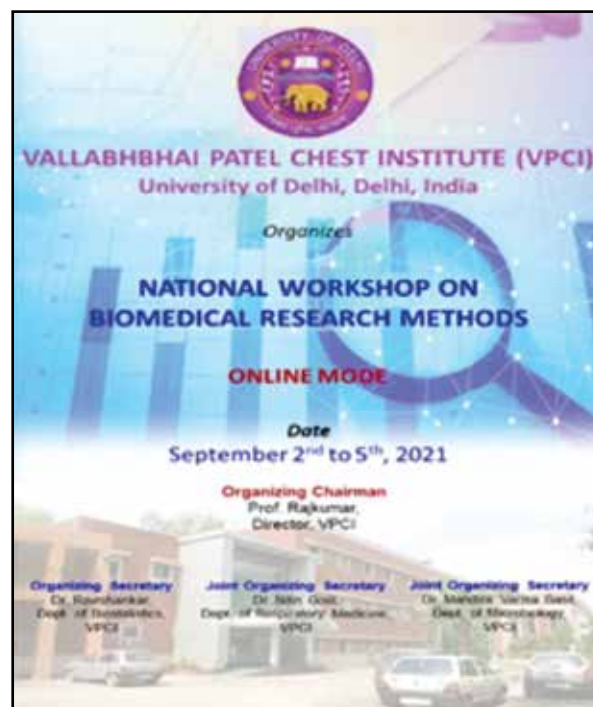
NABH entry level accreditation, VPCI:

1. Dr. Jayeeta Bhadra, Co-ordinator for NABH EL Accreditation, Vallabhbhai Patel Chest Institute facilitated the virtual Orientation Session on NABH entry level certification held on 09.02.2022. Dr. J.L. Meena, Joint Director, NHA and Dr. Aman Raj Gupta were speakers in this session and it was attended by participants from VPCI, National Health Authority and National Productivity Council.
2. All requisite documentation were compiled and various internal training programs were conducted following the orientation session. Application for NABH, EL accreditation for VPCI was successfully submitted on 31.03.2022.

Biostatistics

The Department of Biostatistics plays a vital role and forms a supportive department of the research activities of the Institute. It is entrusted to teach basic and advanced Bio-statistical techniques to MD, DM and PhD students of the institute, organize periodical training programs/ workshops related to Biostatistics, provide statistical guidance/support on identifying the correct study design, sample size computation, data entry & management, data analysis, interpretation and reporting of the results to faculty and students of the institute, preparation of reports (monthly, quarterly, half yearly and yearly) for the Ministry of Health & Family Welfare, Government of India and Directorate General Health Services, Government of Delhi, Data collection of number of patients attending OPD, ward admits, ICU admits, emergency admits, diagnostic tests, radiological tests done at VCH on a daily basis and Online registration of vital events (deaths).

The Department has identifiable and collaborative research projects with other departments of the Institute. Department of Biostatistics, VPCI organised a “National Workshop on Biomedical Research Methods” during September 2-5, 2021. The workshop was conducted on a virtual platform and it covered important topics pertaining to Biostatistics, Epidemiology and Research Methodology. Eminent faculty from reputed institutions were invited to deliver the sessions. The workshop received an overwhelming response from the attendees.



Microbiology

(Including Microbiology, Medical Mycology and Respiratory Virology)

Research

1. Characterization of virulence properties and Molecular typing of clinical and colonizing isolates of *Acinetobacter baumannii*

A. baumannii is an important nosocomial pathogen and antibiotic resistance is leading to treatment failures. A total of hundred isolates, 48 clinical, 44 surveillance and 8 environmental isolates of *A. baumannii* were tested for antibiotic susceptibility, their ability to produce biofilm and hemolytic activity. PCR for biofilm producing genes, oxacillinases and MBLs was performed. The isolates were typed by rep-PCR and MLST. Resistance to meropenem was observed in 87.5%, 97.7% and 62.5% of clinical isolates, surveillance and environmental isolates respectively. 6% of the total isolates were sensitive, 4% were MDR, 86% were XDR and 4% were PDR. Three isolates showed α hemolysis and one showed β hemolysis. 15% of the isolates were found to be non-adherent, 19% were weakly adherent, 42% were moderately adherent and 24% were strongly adherent out of all the 100 isolates. Adherence of biofilm between the clinical and surveillance isolates was observed to have no statistically significant difference (P-value= 0.87). All the three genes (bap, ompA and csuE) were present in all the strongly adherent isolates.

A high degree of genetic variability was observed among 90 isolates, including 63 distinct rep-PCR patterns. MLST was performed on 49 isolates. Sequence types encountered were 149 (n=5), 1482 (n=3), 415 (n=5), 2 (n=9), 1555 (n=1), 94 (n=2) and 164 (n=1). 23 isolates were found to be new and were submitted to PUBMLST website for assigning new ST types.

2. Hospital Infection Control surveillance

Routine surveillance of the hospital was performed at regular intervals to screen for the presence of pathogens. Various samples from ICU and ward such as suction ports, oxygen masks and ports, mattresses, airbed, bed railings, hand swabs from health professionals working in these units, environment samples etc were collected in the months April to December 2021 and March 2022. A total of 88 samples were tested. The reports were submitted along with the recommendations.

3. Contribution of efflux pump gene Rv0842 in drug resistance due to Kanamycin

Chromosomal mutations do not account for all cases of drug resistance in *Mycobacterium tuberculosis*. Efflux pump proteins are thought to play a role. Earlier studies from our laboratory indicated that Rv0842 may play a role in resistance to ethambutol (EMB) and kanamycin (KM). Hence, in the present study, we used an overexpression approach to confirm the role of Rv0842 in drug resistance. Efflux pump gene Rv0842 was amplified using genomic DNA of standard strain *M. tuberculosis* H37Rv and cloned into pVV16 plasmid isolated from *E. coli* DH5 α strain. The Cloned plasmid pVV16:Rv0842 was transformed into *M. tuberculosis*. Minimum inhibitory concentration (MIC) of *M. tuberculosis* H37Rv (Wild-type) and *M. tuberculosis* H37Rv pVV16:Rv0842 (overexpressing Rv0842) against KM and EMB was performed by microplate alamar blue assay (MABA) in triplicates. MIC of *M. tuberculosis* H37Rv (wild-type) and *M. tuberculosis* H37Rv pVV16:Rv0842 against KM was found to be 1.25mg/L and > 64mg/L respectively. MIC of EMB for *M. tuberculosis* H37Rv (Wild-type) and *M. tuberculosis* H37Rv pVV16:Rv0842 was identical (1mg/L). The significant increase in MIC of overexpressed strain against KM confirms the role of Rv0842 in KM resistance. This finding may help to devise new diagnostic methods that would help in the identification of drug resistant mechanisms other than chromosomal mutations.

4. The presence of non-tuberculous mycobacteria in oral cavity of healthy individuals in Delhi

Nontuberculous Mycobacteria (NTM) are environmental organisms of varying pathogenicity that have been associated with a wide variety of infections. The incidence of human infections due to NTM has increased over the last few decades. NTM have been isolated from meat, fish, dairy products, fruits, vegetables and especially unpasteurized milk suggesting a public health risk due to these bacteria. However, their presence as commensal flora in human beings has not been characterized well. Therefore, this study aimed to isolate and

characterize NTM from before and after brushing mouthwash samples from healthy individuals.

Mouthwash samples (n=30) were collected from healthy individuals in sterile containers. Of these 15 samples were collected before brushing and 15 after brushing. Collected samples were homogenized and decontaminated using 2% NaOH method and were cultured on Lowenstein-Jensen (LJ) medium. Microscopic examination of positive cultures using ZN staining was performed to detect the presence of acid fast bacilli. DNA was isolated from culture positive samples and further identification was done using duplex PCR and Sanger's sequencing of Internal transcribed spacer (ITS) Region. Whole genome sequencing (WGS) was performed for a single isolate that had been identified by sanger sequencing as a rare species for accurate identification using NCBI PubMLST, Jspecies WS- Taxonomic check and Blast analysis. Further genomic characterization was done using multiple bioinformatic tools.

Of the 15 samples obtained before brushing, *M. gordonae* (n=2), *M. simiae* (n=3), *M. chimaera* (n=1), *M. sherrishi* (n=1), *M. habana* (n=1) and *M. fortuitum* (n=1) were isolated. Similarly, from the 15 samples obtained after brushing, *M. fortuitum* (n=1), *M. paragordoniae* (n=1), *M. simiae* (n=3), *M. arupense* (n=1), *M. tuberculosis* variant bovis (n=1), and *M. habana* (n=1) were isolated. *M. arupense* was later identified as *M. heraklionense* by WGS. The rare potential pathogen, *M. heraklionense* was characterized further.

The whole genome sequence of *M. heraklionense* was assembled using Shovill and gene annotation was performed by Rapid Annotation using Subsystem Technology (RAST) and NCBI Prokaryotic Genome Annotation Pipeline (PGAP). The genome of 4882418 bp exhibited 67.3% GC content, 59 contigs, and 4,557 genes and 4502 coding sequences. The genome also encoded four rRNAs, 48 tRNAs, three non-coding RNAs and 177 pseudo genes.

This study will help us to determine relative abundance and diversity of NTM in human-associated niches and will be highly significant for the understanding of the diseases they cause. This study has shown the isolation of NTM species with *M. simiae* and *M. gordonae* being the most prevalent from healthy humans. The data, presented here, would also help in understanding *M. heraklionense*, which though, isolated from a healthy individual in this study, is a potential pathogen.

5. Expression profiling of an array of pe/ppe genes in the presence of physical stress

pe/ppe gene family contributes to 7-10% of the total coding capacity of the genome of *Mycobacterium tuberculosis*. However, the functions of this gene family are still unknown. Gene expression studies may pave the way for understanding the functional role of a gene in the physiology of organisms. Hence, in the present study, we attempted to characterize an array of pe genes (pe15, pe19, pe20, pe32, pe33 and pe36) by studying their expression level under various stress conditions. Ten clinical isolates of *M. tuberculosis* and the laboratory strain *M. tuberculosis* H37Rv were subjected to acidic stress (pH4.5), surface stress (0.05% SDS), oxidative stress (5mM H₂O₂), and nutritional stress (PBS). Following exposure, RNA was isolated and cDNA was prepared. The prepared cDNA was utilized for Real-Time PCR to examine the fold-change in the expression of pe genes (pe15, pe19, pe20, pe32, pe33 and pe36). The housekeeping genes sigA and rrs were used as internal controls to normalize mRNA levels.

All the genes showed variable levels of expression among clinical isolates under physical stress. Maximum number of isolates that upregulated pe gene were observed under oxidative stress wherein pe15, pe20, pe36 were upregulated in seven (7/10; 70%) clinical isolates each and pe32 and pe33 were upregulated in six (6/10; 60%) clinical isolates. Under nutritional stress, pe20 and pe33 genes were upregulated in six (6/10; 60%) clinical isolates each. Acidic stress led to the upregulation of pe20 gene in eight (8/10; 80%) clinical isolates followed by pe33 and pe36 that were upregulated in four (4/10; 40%) clinical isolates. The least upregulation of genes was observed under surface stress. Among the studied genes, the upregulation of the pe20 gene was observed in most of the conditions followed by pe33 and pe15.

Upregulation of most of the pe genes under oxidative stress suggests their potential role in the physiology of organisms during oxidative stress. The pe20 gene was upregulated in most of the conditions and can be explored further for a better understanding of its functional role.

6. The cell invasion event of *Mycobacterium tuberculosis* during macrophage infection

The current study aims to investigate the genes responsible for cell invasion and differences in these genes between *M. tuberculosis* clades and lineages in order to identify novel targets for the development of an effective vaccine. The mce operon has been described, and it gives mycobacteria the ability to enter mammalian cells and survive inside the macrophage. We also looked into the NlpC/P60 genes, which are hypothetically involved in *Mycobacterium tuberculosis* cell intrusion, to add to our repertoire of cell intrusion targets for potential vaccine candidates. To target genes involved in cell invasion, the exact time of invasion must be determined. We observed invading intracellular bacteria from infected THP-1 macrophages, at various time points. We used auramine rhodamine fluorescence staining to show invasion of tubercular bacteria within infected macrophages. The invasion process was highest at 3 hours post infection, and maximum intracellular bacilli were observed at 6 hours post infection.

7. Comparison of an in-house Duplex PCR assay with TB-LAMP and GeneXpert MTB/RIF for identification of *M. tuberculosis* directly in clinical samples.

The present study was conducted to compare the diagnostic yield of our previously published in-house Duplex PCR assay (DPA) directly on sputum samples with Loop-mediated isothermal amplification test (TB-LAMP) and GeneXpert MTB/RIF.

The study was performed on 67 sputum samples obtained from subjects presenting with symptoms suggestive of TB and received in the Department of Microbiology, Vallabhbhai Patel Chest Institute, Delhi from January, 2021 to May, 2021. The samples were processed for AFB smear examination and culture on Lowenstein–Jensen (LJ) medium. GeneXpert MTB/RIF was performed on all the samples. Further all the samples were processed by DPA using primers for the genes hsp65 and Rv1458c.

Out of 67 samples, 34/67(50.7%) were smear positive and 33/67(49.3%) were smear negative. Among 34 smear positive samples, 31/34 (91.1%) were positive by DPA and 3/34 (8.8%) were negative by DPA. Nontuberculous mycobacteria (NTM) were identified in four samples that were AFB smear negative and DPA negative; and in one AFB smear positive, but DPA negative sample. On comparison with TB-LAMP assay, the sensitivity and specificity were found to be 80.8% and 85%, respectively. Whereas, on comparison with GeneXpert, sensitivity was 81.8% and specificity was 78.2%.

Duplex PCR assay is a simple, cost-effective and rapid method that can be used on clinical specimens by laboratory personnel with minimal training. Moreover, unlike the existent molecular assays, DPA can identify and differentiate NTM from MTBC.

8. A study of the phenotypic and genetic determinants of Delamanid resistance in clinical isolates of *Mycobacterium tuberculosis*.

We included 160 patients of pulmonary tuberculosis in the study. Out of 160 patients, 80 were new TB positive patients and 80 were patients who had previously been given antituberculosis treatment, but had not been given delamanid (DLM) and were collected from Department of Respiratory Medicine, Vallabhbhai Patel Chest Institute (VPCI). All the sputum samples were further processed for AFB smear microscopy by Ziehl-Neelsen staining and were inoculated on Lowenstein Jensen (LJ) medium.

AFB smear positivity was confirmed in 42/80 (52.5%) of the new TB patients and 35/80 (43.7%) were culture positive. In the previously treated patients 53/80 (66.25%) were AFB smear positive and 28/80 (35.0%) were culture positive. All the isolates (n=63) were confirmed to be *M. tuberculosis* by PCR restriction analysis. Drug susceptibility profiling was done by the standard proportion method according to WHO guidelines. MIC for DLM was performed by 7H11 agar dilution method as one of the preferred method for MIC of DLM stated by WHO. Overall (n=63), 3/63 (4.7%) isolates were resistant to DLM, of which two isolates had MIC of 0.06ug/ml and one isolate had MIC of 0.12 ug/ml. The remaining 60/63 (95.2%) isolates were susceptible to DLM. Out of 63 isolates, 48 isolates were sequenced for *ddn*, *fbiA*, *fbiB*, *fbiC* and *fgd1* genes. None of the *M. tuberculosis* isolates obtained from new TB patients (n=20) showed any polymorphisms in the *ddn* and *fbiC* genes. However, *fgd1* gene had a synonymous mutation Phe320Phe in all the strains except one (19/20; 95%). Also, mutations 9delA

and 473delA in *fgd1* were present in 2/20 (10%) isolates each; another polymorphism Val169Met was present in one isolate (1/20; 5%). The novel mutations need to be studied further for their role in DLM resistance. Further, studies of MIC values from additional clinical trial isolates, and genetic characterization of isolates with high MIC values will provide additional insight into the genetic basis for resistance. The presence of a high MIC in our isolates highlights the fact that the resistance profile to newer anti TB drugs needs to be continuously monitored so that prompt action can be taken if resistant isolates are found.

Medical Mycology Unit

9. An Indian lineage of *Histoplasma* with strong signatures of differentiation and selection

Histoplasma, a genus of dimorphic fungi, is the etiological agent of histoplasmosis, a pulmonary disease wide-spread across the globe. Whole genome sequencing has revealed that the genus harbors a previously unrecognized diversity of cryptic species. To date, studies have focused on *Histoplasma* isolates collected in the Americas with little knowledge of the genomic variation from other localities. In this work, we show the results of a collection of 16 *Histoplasma capsulatum* causal agent of a systemic mycosis over a period of 15 years in the Indian subcontinent. We find that Indian strains of *Histoplasma* form a distinct clade which is highly differentiated from other *Histoplasma* species. We also show that the genome of this lineage exhibits unique signals of natural selection. The group is differentiated enough to satisfy the requirements of a phylogenetic species, as it shows extensive genetic differentiation along the whole genome and has little evidence of gene exchange with other *Histoplasma* species. Next, we leverage this genetic differentiation to identify genetic changes that are unique to this group and that have putatively evolved through rapid positive selection. We found that none of the previously known virulence factors have evolved rapidly in the Indian lineage but find evidence of strong signatures of selection on other alleles potentially involved in clinically-important phenotypes. The present work serves as an example of the importance of correctly identifying species boundaries to understand the extent of selection in the evolution of pathogenic lineages.

10. Transcriptomics and Phenotyping Define Genetic Signatures Associated with Amphotericin B and Echinocandin Resistance in *Candida auris*

The surge in antimicrobial drug resistance in some bacterial and fungal pathogens constitutes a significant challenge to healthcare facilities. The emerging human fungal pathogen *Candida auris* has been particularly concerning, as isolates can display pan-antifungal resistance traits against all drugs, including echinocandins. However, the mechanisms underlying this phenotypic diversity remain poorly understood. We identify transcriptomic signatures in set of three clinical *C. auris* isolates resistant to echinocandins. Here, we used transcriptomics coupled with phenotypic profiling to characterize a set of clinical *C. auris* isolates displaying pronounced echinocandin resistance (ECN-R). A hot spot mutation in the echinocandin FKS1 target gene is present in all resistant isolates. Moreover, ECN-R strains share a core signature set of 362 genes differentially expressed genes. Among others, mitochondrial gene expression and genes affecting cell wall function appear to be the most prominent, with the latter correlating well with enhanced adhesive traits, increased cell wall mannan content, and altered sensitivity to cell wall stress of ECN-R isolates. Moreover, ECN-R phenotypic signatures were also linked to pathogen recognition and interaction with immune cells. Hence, transcriptomics paired with phenotyping is a suitable tool to predict resistance and fitness traits as well as treatment outcomes in pathogen populations with complex phenotypic diversity.

Amphotericin B (AmB) is a fungicidal drug that, despite its toxic side effects, remains a drug of choice for the treatment of drug-resistant fungal infections, including those caused by *C. auris*. However, the molecular mechanisms underlying AmB resistance are poorly understood. We present data of four clinical *C. auris* isolates, three AmB-resistant (MIC ≥ 2.0 mg/L), one AmB-sensitive isolate (MIC 0.5 mg/L) to determine the plausible cause of increased AmB resistance. We performed RNA-seq of AmB-resistant and sensitive *C. auris* isolates. Remarkably, AmB-resistant strains show a pronounced enrichment of genes involved in lipid and ergosterol biosynthesis, adhesion, drug transport as well as chromatin remodelling. The transcriptomics data confirm increased adhesion and reduced lipid membrane permeability of AmB-resistant strains compared to the sensitive isolates. The AmB-resistant strains also display hyper-resistance to cell wall perturbing agents, including Congo red, calcofluor white and caffeine. Additionally, we noticed an increased phosphorylation

of Mkc1 cell integrity MAP kinase upon AmB treatment. Collectively, these data identify differences in the transcriptional landscapes of AmB-resistant versus AmB-sensitive isolates and provide a framework for the mechanistic understanding of AmB resistance in *C. auris*.

Virology Unit

The main objective of virology unit is diagnosis of respiratory viruses in clinical samples and performing basic and translational research on influenza, chikungunya, and dengue viruses. In addition, the Virology Unit is the ICMR centre for the molecular diagnostics of SARS-CoV-2 (COVID-19) the out- and in-patients visiting the Viswanathan Chest Hospital.

The current research includes working on invitro manipulation of RNA and studying signalling cascades during influenza and chikungunya virus infection. We are exploring different strategies to inhibit viral replication, such as RNA-based inhibition of signalling pathways. Additionally, we are studying a proof-of-concept vaccine design with a potential of a universal vaccine candidate against various serotypes of the dengue virus. The immunological properties of chimeric peptide are being studied which will further be validated in-vivo. We also studied that the manipulation of UPR response in chikungunya virus inhibit virus replication. We also validated the knockdown of influenza virus replication using microRNA and plant extracts (Suramin). There is an ongoing ICMR sponsored research project on engineered virus-based vaccine against influenza. The data generated in the first year of the project was submitted to the IPR division for patent filing on the basis of the recommendation of expert panel (ICMR).

Number of clinical samples tested for SARS-CoV-2: 7188

Nature of sample: Nasal and throat swab

Pathology

Research

Lung Cancer

1. BRAF mutation in Lung cancer

BRAF mutations have been reported in ~4% of lung cancers, in western countries. They are most common in adenocarcinoma lung. Of the BRAF mutations- the BRAF V600E mutations specifically occurs in 1-2% of non-small cell lung cancers. This mutation results in the unchecked MAPK signaling and tumour cell growth. Most of these patients have history of smoking. In present study, we evaluated the BRAF expression in lung cancers from 2021-2022 in 21/69 cases received in department of Pathology. Of these 14 were males and 7 were females. DNA was extracted from pleural fluid cells and from transbronchial lung biopsy specimen. 7/21 cases (33.33%) showed BRAF mutation. Mutations were identified at V600E (5/7 cases, 71.43%), V 600D- (3/7 cases- 42.86%), V600K- 2/7 cases- (28.57%). V-600R- 5/7 cases (71.43%). The final histopathology diagnosis included, Adenocarcinoma- 1/7 cases, Small cell carcinoma lung - 1/7 cases, poorly differentiated NSCLC -3/7 cases, metastatic carcinomas -2/7. The commonest mutations in present study were V600E and V600R. A higher prevalence of mutation in the study and availability of BRAF targeting drugs indicates the need for molecular profiling studies and personalised targeted therapy in these patients.

2. Study of pan-cytokeratin positivity in non-small cell lung cancer

Cytokeratins, belong to the intermediate filament protein family and are particularly useful tools in oncology diagnostics. The cytokeratins are divided into acidic (pH <5.7) and basic (pH >6.0) subfamilies. The pan-cytokeratin (AE1/AE3) is broad spectrum and reacts with both acidic and basic keratins in the cytoplasm of normal epithelia and carcinomas. Thus its elevated levels can be used as a useful marker for epithelial malignancies. In this ongoing study, the pan-cytokeratin expressed by tumor cells is being correlated with other clinical and histological features. 54 cases were evaluated in this period and 46/54 (85.19%) were positive for Pan-CK. The histopathological correlation revealed that- Undifferentiated NSCLC-10, Squamous cell carcinoma-4, Adenocarcinoma- 1(Lepidic pattern), Clear cell carcinoma -2, Pleural metastasis of NSCLC-3, Squamous papilloma-1, NHL, mesothelial hyperplasia with lymphocyte predominance-4, Adenosquamous carcinoma-1. The clinical utility of pan- cytokeratin expression is being evaluated; (i) to characterize the source of various neoplasms, (ii) to prognosticate non-small cell lung cancer (NSCLC). (iii) as biomarker of metastasis, (iv) to Identify pan-cytokeratin positive circulating tumor cells of NSCLC, (v) to Identify metastases promoters such as CXC chemokine, CXCL12, and its receptor, CXCR4 that are co-expressed on pancytokeratin expressing cells of NSCLC.

3. Study of PD-L1 expression in lung cancer

In this study, the lung cancers are being evaluated for their expression of programmed cell death inhibitor ligand-1 (PD-L1). Since, The PD-L1 expressed on cancer cells engages with PD-1 on immune cells and contributes to cancer immune escape. Therefore, blocking PD-L1 can restore T cells from exhausted status and eradicate cancer cells. In the present study, we analyse the tumor cell PD-L1 expression as a predictor of the tumor cell response to immune checkpoint inhibitor therapy prior to initiation of therapy. Total 20 cases were evaluated for PD-L1 in this year. Of these, 8/20 cases (40%) showed PD-L1 positive. The correlation of the lung cancer histopathological types with the PD-L1 associated anti-cancer immune response is being assessed to identify the subset of PD-L1 positive patients who will benefit from PD-L1 therapies.

4. KRAS mutated Squamous cell lung cancer

The Kirsten rat sarcoma virus transforming protein (KRAS) mutations in codons 12, 13, and 61 genomically drive nearly one-third of lung carcinomas. Adenocarcinomas of the lung commonly harbor KRAS mutations and the first specific inhibitor of the p.G12C mutation of KRAS has recently been approved by the FDA for its treatment. KRAS mutations are rare in squamous cell carcinoma of the lung and their impact on clinical

outcome is poorly understood. Therefore we are studying the prevalence of KRAS mutation in squamous cell carcinoma lung and evaluating the prognostic and predictive significance of KRAS mutations in squamous cell carcinoma lung. As compared to the Cancer Genome Atlas in which KRAS mutations were found in 11/841 (1.3%) cases of Squamous cell carcinoma, 4/15 cases of Squamous cell carcinoma (26.67%) and 2/5 (40%) cases of adenosquamous cell carcinoma showed KRAS positivity in present study. Not only were our results different from Western population, but these cases showed higher risk of progression and poor prognosis

5. Role of Adjuvant pirfenidone therapy in lung cancer

Pirfenidone is an antifibrotic agent approved for the treatment of IPF. It has been demonstrated to suppress the TGF β signaling and modulate the expression of immune-related genes. In lung cancer patients with comorbid IPF, the efficacy of pirfenidone with immune checkpoint inhibitors and with standard cisplatin based chemotherapy remains to be investigated. The effect of pirfenidone, bleomycin and cisplatin on A-549 cells was evaluated in five groups: Group-I-Saline, Group-II-bleomycin (20mM), Group-III-bleomycin+pirfenidone (500 μ g/ml), Group-IV-bleomycin+cisplatin(10mM). Group-V-bleomycin (20mM)+pirfenidone (500 μ g/ml)+cisplatin (10mM). Cells were harvested at 4,6,8,24,48 hours and MTT assay, Scratch proliferative assay, SMAD-2,3,5 mRNA levels were assessed. Our results collectively demonstrated that pirfenidone facilitated antitumor immunity and enhanced the efficacy of cisplatin-based chemotherapy. It may act as an adjuvant to immunotherapy in cancer treatment, particularly, in lung cancer patients with preexisting IPF. This aspect is presently being studied.

6. Biomarkers in Immunotherapy of lung cancer

Various biomarkers are being evaluated to predict response to Immune check point inhibitor therapy in advanced malignancies and some have been clinically validated. Biomarkers may be detected and measured in the tumor tissue or in the peripheral blood. The current FDA approved tissue biomarkers for solid malignancies including PD-L1, tumor mutational burden (TMB), and microsatellite instability (MSI). Other tissue biomarkers being explored include tumor gene expression profiling (GEP), multiplex immunohistochemistry (IHC) and immunofluorescence (IF), tumor infiltrating lymphocytes (TILs), immunoscore, T cell receptor (TCR) diversity, and microbiome, as well as cellular and soluble peripheral blood biomarkers. PD-L1 is an imperfect biomarker by itself, as its expression can be triggered by active immune response (i.e., patients with a negative baseline PD-L1 stain might still respond to ICI). Further, tumors with high PD-L1 expression may be resistant to treatment. Therefore in the present study, we are correlating PD-L1 levels with tumor cell phagocytosis (cannibalism). The cases of lung cancer displaying cannibalism were assessed over 13-year period, 2007-2020 (n=350) and correlated with their tumor morphology, coexisting inflammation, patient age at presentation, sex, stage/grade, smoking status. Cannibalism was identified in 10/350 (2.9%) cases of lung cancer [9/10 (90%) were males and 1/10 (10%) were females]. It correlated with background inflammation and infiltration of acute on chronic inflammatory infiltrate was seen in 6/10 (60%) cases. It may be considered as a possible biomarker for tumor immune escape and poor prognosis.

Lung Fibrosis

7. Pirfenidone regulates Macrophage polarisation via TGF- β 1-Smad signaling

This study explores the therapeutic effect of pirfenidone and its mechanisms in the regulation of macrophage polarization. The U-937 cell line is being grown in suspension in RPMI media and Cells are activated by treating with 12-O-tetradecanoylphorbol-13-acetate (PMA) for 24 h. On Day 1, Group I-cells (IL-4, IL-13 for 48 hours) achieve M2 macrophage phenotype and Group II- U-937 cells (Bleomycin for 48 hours) obtain M1 and M2 differentiation. Group III- control cells (Undifferentiated but activated U-937 cells). Each group was divided into 6 Subgroups and harvested at 2, 4,6,8,24,48 hour intervals. The M2 macrophages show increased TLR-2 expression at 24 and 48 hours as compared to control. (b) Initial upregulation of VEGF expression at 2 and 4 hrs after instillation followed by its decrease. We demonstrate the efficacy of Pirfenidone-PLA nanoformulation in Group II, upregulating M1 (TLR-2) in (Late Phase) and downregulating M2 (early phase) shifting the macrophage phenotype from M2 towards M1 phenotype. These changes are brought about by change in TGF-Smad signaling and are being assessed.

Nanotherapy

8. Targeting respiratory epithelial progenitor cells in fibrotic lung using Nanotherapy

The alveolar epithelial progenitor cells (EPCs) play a critical role in lung regeneration after post fibrotic injury. After injury, the EPC population expands to regenerate the type 1 pneumocytes. These newly found EPCs express a distinct Krt8+ phenotype that is rare in intact alveoli. Understanding the characteristics and functions of these injury-induced EPCs and their downstream signaling pathway, can potentially point the way to unique therapeutic targets for fibrosing lung diseases. The effects of bleomycin injury, pirfenidone standard therapy and its polymeric nanoformulation were studied in Wistar rat model. The lung histopathological changes were correlated with changes in EPC-Prominin-1/CD133, EMT-TGF- β and bFGF/FGFR-1 pathways. Bleomycin injury initially up-regulates CD-133/EPCs (Day 7) and protects the bleomycin induced injury by preventing the recruitment of inflammatory cells. The downregulation of CD-133 seen on Day 14 and 28 correlates with progression of fibrosis. Pirfenidone and its nanoformulation significantly upregulate CD-133 expressed by EPC in bronchioles, endothelium and lung interstitium from day 7 up to day 28. This correlated with attenuation of lung inflammation in early phase and fibrosis in late phase. Conclusion: Pirfenidone and its polymeric nanoformulation act on epithelial progenitor cells and suppress lung inflammation, EMT and profibrotic pathways to attenuate bleomycin-induced fibrosis

9. Nanoapproaches to Modify Lung EMT

Targeting the lung microenvironment and epithelial mesenchymal transition (EMT) in tumours and in nontumoral fibrotic diseases has potential as adjunct therapies and is the focus of recent investigations. The Covid-19 pandemic and post covid fibrosis have further enhanced the need for identification of potential targets of EMT in these diseases. In lung cancer, the acquisition of EMT allows for increased tumour cell migration and invasive abilities. More recently, tumour cell EMT has been shown to mediate the acquisition of chemoresistance linked to cancer stem cell (CSC)-like features. The resistance of CSCs to conventional chemo- and radiotherapies is the basis of linking CSC to innovating nanotechnological therapeutic approaches. Some of these include polymeric micelle-based nanoformulations incorporating cisplatin (CDDP/m) along with miRNAs, combinations of thermo- and chemotherapy utilizing multifunctional magnetic nanoparticles, etc. In, lung fibrosis EMT promotes the expansion of myofibroblast populations, extracellular matrix deposition, airspace loss and mortality. Thus focusing on the therapeutic potential of targeting exosomes and their cargos: miRNAs, lncRNAs, and proteins in order to modulate fibroblasts' transformation into myofibroblasts and regulate pulmonary fibrosis. Targeting the TGF-BMP-7 pathway by micelles is also being studied. Both these lung pathologies are associated with high morbidity, mortality and their healthcare burden is increasing worldwide. Both these diseases can be regulated by targeting EMT. Nanomedicine presents a promising approach to enhance the efficacy and delivery of anti-fibrotic and anti-chemotherapeutic agents. So far, preclinical studies have provided encouraging results and offer substantial promise to advance the treatment of both tumours and in nontumoral fibrotic lung diseases.

Pharmacology

Research

1. Smart Regulation for antibiotic use in India: understanding, innovating and improving compliance

This project was funded by Department of Biotechnology under India-UK collaboration on containment of antimicrobial resistance (AMR). The project was completed in September 2021 and its final report and other financial statements have been submitted.

During the project and after completion research papers were written and six research articles have been published in peer review journals.

The project has two main aims:

1. To better understand the various problems surrounding the regulation of antimicrobial resistance (AMR) containment in India
2. To improve the situation by applying the concepts and methods of 'smart regulation'

Smart regulation embraces "flexible, imaginative and innovative forms of social control"

Taking one-health concept we have four case studies and they are being studied in Haryana and Telengana with regulations on all four case studies at federal level. Three taking one-health in consideration, the following four sectors were studies:

1. OTC antibiotic sales at pharmacies without valid prescription
2. Poultry farmers using antibiotics (including as a growth factor)
3. Hospital AMR containment
4. Pharma industry effluents and AMR

2. Assessment of adherence to inhalers and its correlation with control of symptoms in asthma and chronic obstructive pulmonary disease patients

Asthma is a common chronic respiratory disease affecting both children and adults causing considerable mortality in low- and lower-middle income countries (LMIC). Asthma treatment goals include preventing exacerbations and improving quality of life of patients. Though there is no curative treatment but pharmacological treatment with inhaled bronchodilators and anti-inflammatory drugs helps to achieve these goals. Several studies have documented that non-adherence to inhaler medications has major adverse impact on disease control and increases overall cost of healthcare. Hence measurement of treatment adherence is essential to optimize management of asthma patients. Objective measures to assess adherence to inhalers such as electronic monitoring devices and measuring blood/ urine drug concentrations are highly effective but costly and impractical in routine resource limited clinical settings. Whereas, subjective method such as Test of Adherence to Inhalers (TAI) and Medication Adherence Report Scale for asthma (MARS-A) are validated self-reported questionnaire that have advantage of being straightforward and economical tool to assess inhaler adherence. No subjective tools to measure adherence to inhalers has been validated in India. Therefore, the objective of the present study is to assess reliability and validity of TAI and MARS-A in asthma patients in our tertiary care referral hospital.

The overall aim of the study is to validate Test of adherence to Inhalers (TAI) and Medication adherence report scale for asthma (MARS-A) in asthma patients.

Objectives of the study are: 1. To assess the adherence to inhalers using 12-item TAI and 10-item MARS-A 2. To assess asthma control using Asthma control questionnaire (ACQ) and Global Initiative for asthma (GINA) assessment of asthma symptom control in asthma patients 3. To assess reliability and validity of 12-item TAI and 10-item MARS-A in asthma patients.

The work on this project has started and is a collaborative project of department of Pharmacology and department of Pulmonary medicine.

3. A clinical study to evaluate the effects of yogic intervention on pulmonary functions, inflammatory markers, oxidative stress and health status in patients of Chronic Obstructive Pulmonary Disease (COPD)

The study is a prospective, randomized, parallel design clinical research as per ICH-GCP guidelines after approval by the Institutional Ethical Committee of VPCI. The patients were recruited as per the inclusion/exclusion criteria and randomized in two groups- Group I was administered the conventional drug treatment (corticosteroids and bronchodilators); and Group II was given yogic intervention along with the conventional drugs. The patients were physically examined and baseline parameters of PFT, BODE index, Quality of life, markers of inflammation (NLR, OPG, TNF- α , FeNO) and oxidative stress (8-isoprostane, SOD) were assessed and followed up at 1, 2 and 3 months. The comparison of parameters was done between Group I and Group II after respective treatments. In the present study, we found the reduction in levels of inflammatory markers (NLR, OPG and TNF- α) in both the groups by respective treatment for 3 months. However, the reductions were remarkably more in Group II as compared to Group I. Further, the levels of CC16 were also found to be significantly increased in both the groups and the degree of improvement was found to be remarkably more in Group II as compared to Group I, thus indicating anti-inflammatory of yogic intervention in COPD patients. This was corroborated by significant reduction in markers of oxidative stress and improvement in quality of life in Group II patients. The data suggested that introducing yoga as adjunct therapy in COPD can enhance the efficacy of conventional pharmacotherapy.

4. Pharmacological studies to evaluate the anti-inflammatory and immunomodulatory effects of *Hibiscus rosa-sinensis* and *Piper nigrum* and their cellular and molecular mechanism of action in experimental models of Bronchial asthma"

Pharmacotherapy of bronchial asthma consists of anti-inflammatory and bronchodilator drugs, but their use is generally associated with various side effects, refractoriness/relapse, and high treatment cost. Therefore, viable alternatives from folklore herbal agents need to be explored and validated by modern methodology. The study was conducted to evaluate and validate the anti-asthma potentials of *Hibiscus rosa-sinensis* or *Piper nigrum* by assessing the markers of airway inflammation, immunity, airway remodeling, bronchial responsiveness to methacholine, and also oxidative stress to delineate the underlying mode/mechanism involved in their therapeutic effects. Animal models of ovalbumin induced airway inflammation (15 days) and airway remodeling (23 days) in rats were used to achieve these objectives. The results showed that administration of *Hibiscus rosa-sinensis* (100 mg/kg and 250 mg/kg) or *Piper nigrum* (30 mg/kg and 100 mg/kg) alone as well as in the combination of their suboptimal doses resulted in reduced airway hyperresponsiveness to spasmogen as compared to vehicle-treated OVA-sensitized and challenged rats (disease controls). In addition, treatment with *Hibiscus rosa-sinensis* or *Piper nigrum* resulted in a reduction in the levels of inflammatory cytokines, viz. TNF- α , IL-4 (Th2 derived), pro-inflammatory transcription factor NF- κ B, OVA specific IgE, as well as inflammatory cells- eosinophils and neutrophils and increased levels of IFN- γ and HDAC, thus suggesting the anti-inflammatory and immunomodulatory effects of both the herbal drugs. *Hibiscus rosa-sinensis* or *Piper nigrum* also reduced TGF- β , IL-13 and hydroxyproline level in OVA induced model of airway remodeling, thus suggesting reduced fibrosis, collagen formation and structural remodeling.

5. Pharmacological studies to evaluate the anti-inflammatory and immunomodulatory effects of *Aerva Lanata Linn.* in experimental model of Bronchial Asthma and the cellular and molecular mechanism"

The study is being conducted to evaluate the effects of *Aerva Lanata Linn.* extract in experimental models of airway inflammation, bronchial hyperreactivity and airway remodelling, in OVA sensitized and challenged rats and possible cellular and molecular mechanisms involved therein. The rats were immunized and challenged with ovalbumin to simulate model of bronchial asthma. The markers of inflammation and immunity viz. IL-4, TNF- α levels, pulmonary functions by whole body plethysmography, NOx, NF- κ B, in Blood and BAL fluid of OVA sensitized and challenged rats were assessed. Overall analysis showed that the level of IL-4, TNF- α , penh (by whole body plethysmography), NOx, NF- κ B levels were increased in experiment control group in both blood and BAL fluid as compared to normal control group. The above markers were significantly reduced in *Aerva Lanata Linn.* treated group at all doses (25 mg/kg, 50 mg/kg, 100mg/kg), p.o. and the maximal response was observed at the dose of 100mg/kg. The results of all above parameters in both blood and BAL fluid were comparable with prednisolone treated group, which was used as a positive control. The result suggested that

Aerva Lanata Linn. has anti-inflammatory and immunomodulatory effects during ovalbumin induced asthma in rats. The study is under progress to evaluate the effects of the drug on oxidative stress parameters.

6. Pharmacological studies on *Hedychium spicatum* on airway inflammation and remodeling in experimental model of bronchial asthma"

The study was conducted to evaluate and validate the anti-asthma potentials of *Hedychium spicatum* (100, 200 and 400 mg/kg) by assessing the markers of airway inflammation, immunity, airway remodeling, bronchial responsiveness to methacholine, and also oxidative stress to delineate the underlying mode/mechanism involved in their therapeutic effects. Animal models of ovalbumin induced airway inflammation (23 days) and airway remodeling (22 days) in rats were used to achieve these objectives. Results showed that sensitization and challenge with ovalbumin resulted in increased enhanced pause (P-enh), a marker of bronchial hyperresponsiveness, eosinophils, OVA-specific IgE and decreased GSH as compared to that of normal control rats. The results showed that administration of different doses of *Hedychium spicatum* (100, 200 and 400 mg/kg) resulted in reduced airway bronchial hyperresponsiveness to spasmogen exposure as compared to vehicle-treated OVA-sensitized and challenged rats (disease controls). Treatment with *Hedychium spicatum* showed reduction in OVA specific IgE and eosinophil cell counts as well as the increase in GSH levels as compared to that of disease control rats, indicating anti-inflammatory effects of the herbal drug.

7. Effects of Nitric Oxide Modulators on Airway Inflammation, Bronchial Hyperresponsiveness and Oxidative Stress in Experimental Model of Asthma in Rats

This study was aimed at studying the effects of NO precursor (L-arginine), NOS inhibitor (L-NAME) and arginase inhibitor (ABH) on airway inflammation, airway hyperresponsiveness and oxidative stress in an experimental model of bronchial asthma in rats. Asthma was induced by immunization with ovalbumin (40 mg/rat, i.p.) adsorbed to 2 mg of aluminium hydroxide. Fourteen days after the immunization, the rats were challenged with 1% ovalbumin (OVA) aerosol for 20 minutes/day for 8 consecutive days. All drugs and vehicles were administered 30 minutes prior to 1% ovalbumin aerosol challenge, daily for 8 days. Twenty-four hours after the last challenge with ovalbumin, animals were challenged with methacholine aerosol and airway hyperresponsiveness was assessed using whole-body plethysmography method. Further, animals were sacrificed and blood and bronchoalveolar lavage (BAL) fluid samples were collected and stored for analysis. Administration of L-arginine and ABH was associated with a decrease in airway hyperresponsiveness and airflow limitation, as measured by whole-body plethysmography. Effects of L-arginine and ABH on inflammatory cell count in blood and BAL fluid, along with the effects on TNF- α and IL-10 levels suggested the anti-inflammatory effects of these drugs. OVA-specific IgE levels were also decreased in the serum and BAL fluid of the rats treated with either of these two NO modulators (L-arginine and ABH), indicating an immunomodulatory role of these drugs.

8. Effects of *Withania somnifera* extract on experimental model of type 2 diabetes mellitus induced Alzheimer's disease and the possible mechanisms in rats

The study was designed to investigate the effects of *Withania somnifera* (WS) root extract on insulin resistance in SD rats. Insulin resistance was developed by feeding the animals with high-fat diet (HFD) for 8 weeks followed by low dose of streptozotocin (STZ; 35 mg/kg, i.p.) treatment. After 4 weeks of STZ administration, animals of all the groups were treated with root extract of WS at the dose of 300 mg/kg/day, for another 8 weeks. Insulin resistance in all the groups was measured at the end of the study by homeostasis model assessment of insulin resistance (HOMA-IR). HFD-STZ treated animals were found to have high levels fasting blood glucose) and serum insulin and consequently the HOMA-IR (which is an indicator of insulin resistance) as compared to the normal controls. The disease control animals treated WS showed reduction in HOMA-IR levels as compared to that of untreated diseased rats. After 8 weeks of treatment with WS, the levels of neurodegenerative biomarkers viz. Amyloid beta 1-42 (A β 1-42), glycogen synthase kinase-3 β (GSK-3 β) and insulin degrading enzyme (IDE) were measured in prefrontal cortex and hippocampus of rats. The levels of brain-derived neurotrophic factor (BDNF), the marker for neuroplasticity were also estimated in both tissues. It was found that HFD-STZ treated animals have higher levels of A β 1-42 and GSK-3 β and lower levels of IDE as compared to normal animals. HFD-STZ animals treated with WS showed reduction in the levels of both A β 1-42 and GSK-3 β and increase in IDE levels as compared to untreated HFD-STZ animals

Physiology

Research

1. Cognitive performance after short duration sub-maximal exercise in young adults

Exercise has been implicated to improve many different tests of brain function. It has been observed that by performing a moderate intensity aerobic exercise (70-80% HRmax or Sub-maximal Exercise), there is an improvement in working memory. In situations of conflicts, e.g. short duration sortie by air force personnel, a strategy is required that can improve the cognitive performance of defense personnel with minimum time consumption. Objective of this study was to explore whether short duration of sub-maximal exercise improves cognitive performance. Data collection has been completed and after its analysis, it was concluded that Short Duration Exercise doesn't Improve Cognitive Performance.

Pulmonary Medicine

(Including Pulmonary Medicine, Cardio-respiratory Physiology and Respiratory Allergy and Applied Immunology)

Research

1. Cockroach exposure and its allergy sensitization in asthma patients

Asthma is a heterogeneous disease with distinct phenotypes. Serum total IgE, SSIgE and SPT are the methods of evaluating allergen sensitization. The present study evaluates the exposure and sensitization to cockroach (*Periplaneta americana*) antigens in asthma patients in a metropolitan city of India. The study enrolled 200 consecutive bronchial asthma patients, diagnosed as per GINA guidelines. As per history of exposure to cockroaches, the patients are divided in two groups as exposed and non-exposed asthmatic. All the enrolled subjects underwent SPT against common aeroallergens including cockroach, spirometry and estimation of tIgE level and SSIgE against cockroach. Out of 200 asthma patients, a total of 114 (57%) asthmatic were found SPT positive against one of the common aeroallergens, of which 68 (34%) showed SPT sensitivity against cockroach. A total of 103 (51.5%) patients were found exposed to cockroaches. In the cockroach exposed group, the mean serum tIgE was found significantly higher than the non-exposed group (569.31 ± 224.64 vs 479.29 ± 237 IU/ml; $p=0.007$). The mean SSIgE against cockroach in exposed groups was found not significant than non-exposed group (4.87 ± 11.19 vs 4.11 ± 8.39 KUA/L; $p=0.589$). The mean tIgE was also not significant in atopic compared to non-atopic asthmatic (553.25 ± 218.12 IU/ml vs 489.1 ± 251.16 IU/ml; $p=0.056$). The mean SSIgE against cockroach was 5.66 ± 10.45 KUA/L for atopic and 2.96 ± 8.98 KUA/L for non-atopic ($p=0.054$). The airway obstruction was almost the same in both groups. Asthmatic patients who were exposed to cockroach and atopic had high tIgE, SSIgE levels and SPT positivity against cockroach antigen compared to nonexposed patients.

2. Relevance of skin-prick test and immunoglobulin E estimation in pigeon-exposure asthma patients

Background Pigeon exposure is common in India due to its cultural and religious practice. Hypersensitivity to pigeon allergen is well known as pigeon breeder disease. Limited data also show that pigeon allergen was associated with increased asthma. The aim of this study is to evaluate skin-prick test (SPT) and immunoglobulin E (IgE) levels in pigeon-exposed asthmatics. It is a prospective observational study with 200 asthma patients as per Global Initiative for Asthma guidelines. As per the history of exposure to pigeons, patients were divided into two groups: exposed and nonexposed asthmatics. All patients underwent SPT against CAA with pigeon allergen and measurements of serum IgE. The result was compared between two groups. Out of 200 patients with mean age of 29.83 ± 9.92 years, 108 had pigeon exposure. The SPT against CAA sensitivity was positive in 74% exposed and 63% nonexposed groups. While SPT against pigeon allergen was positive in 17 (15.7%) in exposed patients. The mean total IgE was higher in exposed asthmatics but not significant (538.75 ± 248.5 and 510.2 ± 220.1 IU/ml, $P=0.0078$). The mean specific IgE against pigeon dropping and feather was significantly higher in exposed asthmatics (0.4513 ± 1.01 and 0.1957 ± 0.179 KUA/L, $P=0.003$; 0.3644 ± 0.329 and 0.1176 ± 0.116 KUA/L, $P=0.000$). The asthmatic patients with exposure to pigeons had higher SPT against pigeon allergen and higher total and specific IgE against pigeon antigens. This may be one of the reasons for higher asthma in urban cities.

3. Protracted non-invasive ventilation for severe hypoxemic respiratory failure Long COVID: a case series

COVID pandemic has been a cause of extensive morbidity and mortality worldwide. Patients with severe COVID have been observed to suffer from remnant lung damage, fibrosis and oxygen dependency. These patients have still an unpredictable course and outcome. The outcome of these patients is not clearly defined yet. The signs and symptoms in such patients persisting even 4 weeks after acute COVID-19 has been recently named as "Long COVID". In the present case series, we present the course and outcome of two such 'Long COVID' patients who presented with severe hypoxemic respiratory failure. These patients were managed with a prolonged application of Non-invasive ventilation with high flow oxygen and along with glycaemic control,

steroids and antibiotics. The patients showed tremendous response to the treatment and could be weaned from NIV after about three weeks of therapy. These cases demonstrate the utility of NIV, even in severe hypoxemic respiratory failure, in Long COVID.

4. Isolated Pulmonary Cysticercosis Presenting as Mass Lesion

We report a case of pulmonary cysticercosis manifesting as a mass lesion. Cysticercosis confined to lungs is a rare manifestation of human cysticercosis. The disease mainly affects the central nervous system, skeletal muscles, and eyes. Pulmonary involvement is rare and usually presents as bilateral pulmonary nodules. The diagnosis was made based on positive enzyme-linked immunosorbent assay (ELISA) for anticysticercal antibodies, and the patient was started on antiparasitic therapy along with steroids. Symptomatic and radiological improvement was seen. There is no previous case report of isolated pulmonary cysticercosis presenting as mass lesion.

5. Clinico-radiological evaluation of post COVID-19 at a tertiary pulmonary care centre in Delhi, India

In the present COVID-19 pandemic situation, there is a gradual increase in number of patients with post-COVID-19 sequelae. The present study is a retrospective analysis of these post-COVID-19 patients presenting to one of the units of Viswanathan Chest Hospital, Vallabhbhai Patel Chest Institute, University of Delhi, Delhi in the period from 17 June 2020 to 22 October 2020. We analysed the demographic profile, history, functional assessment and all investigations of this study cohort. Out of the 2,165 patients provided consultation, there were 35 patients of post-COVID-19, which were included in the present study. These patients had a mean duration of 47 days from discharge to first visit to our hospital. Preexisting respiratory comorbidity was present in 63%. History of exertional was present in 52%. Fatigue (65%) was the most common symptom followed by breathlessness (60%), cough (45.71%) and chest pain (28.57%). Three patients had significant desaturation on 6-minute walk test and one patient had type 2 respiratory failure on presentation. Chest X-ray was abnormal in 34.28% (n=12). On thorax CT (n=17) the most common finding was diffuse reticulations (52.94%) followed by diffuse ground glass opacities (GGOs) (35.29%). One patient each were newly diagnosed as pulmonary tuberculosis and tubercular unilateral hilar lymphadenopathy. Conclusively, post-COVID-19 patients may have remnant symptoms like fatigue, breathlessness and cough. Also, patients with pre-existing respiratory diseases are more symptomatic and even may suffer from deterioration in the clinical course. Further we need to be alert of alternate diagnosis or infections like tuberculosis (TB) in these patients, especially in TB endemic countries like India. Simultaneously, the use of immunosuppressant drugs like steroids for COVID-19 management, predisposes to TB. A proper evaluation with holistic and exertional management plan is the need of the hour for post-COVID-19 patients, until its time course, evolution and manifestations are unravelled.

6. Expression profile of MUC1 protein in Pigeon allergens positive asthmatic

Certain urban areas could contain many pigeon's allergens, which may play an imperative role in the exacerbation of asthma in pigeon allergen sensitive asthma patients. The circulating form of MUC1 in human serum has been considered as a biomarker for some allergic diseases. The study aimed to investigate the role of MUC1 in pigeon allergens positive asthma patients. We were enrolled 200 asthma patients including 81 males and 119 females. After positive pigeon exposure history, 108 patients underwent SPT testing against pigeon allergens (dropping and feather). A total of 17 patients, who had exposure history with SPT positive were undergone detail clinical examination. Serum MUC1 expression analysis was done by western blotting method. Out of 200 asthmatic patients, 108 (54%) patients had a history of exposure to pigeons. Skin prick test against pigeon (feather & dropping) allergens was positive in 17 (15.7%) patients among exposure asthmatics. The mean age of the study population was 28.8 ± 10.4 years with 9 males and 8 females. Baseline airway obstruction was seen in 58.8% cases. Out of 17 pigeons expose and sensitive asthmatic the MUC1 expression was up-regulated in 15 (88.2%) and down-regulated in 2 (11.8%). The mean value MUC1 fold change of 15 patients with up-regulation was 4.63 ± 3.00 fold. MUC1 expression was up-regulated in 88.2% of patients, who were exposed and sensitive to pigeon allergen (dropping and feather). MUC1 may consider as a biomarker in pigeon sensitive asthma patients.

7. Tobacco Quitline toll-free number on tobacco packets in India: An analysis on outcome

On 1 September 2018, 2 year later the launch of National Tobacco Quitline Services (NTQLS), new health warnings on tobacco products packets consisting of NTQLS toll-free number came into effect in India. The present study aimed to measure the effects of printing tobacco Quitline number on tobacco packets on calls to NTQLS. All calls to the NTQLS were monitored over 1 year, six months before and after the tobacco Quitline number on tobacco packets came to effect. Call details such as tobacco user's demographic profile, tobacco use habit, follow-up and quitting status also extracted through Call Detail Record (CDR) files from the server of NTQLS for the purpose of this study. Calls hit on IVR (Interacted Voice Response) increased by 7.7 times, on an average 6064 calls daily hit on NTQLS's IVR after the new health warning consisting of toll-free number on tobacco packets came into effect. Tobacco user registration increased by 3.3 times (18039 vs 5469). Overall, 264.5% (4790) relative increment in tobacco quitters, as it were only 1314 quitters six months before the new health warning. 100% callers cited tobacco packets as the primary source of tobacco Quitline toll-free number. The helpline number of Quitline on tobacco packet showed a strong potential to aware the public about the tobacco Quitline. This has increased the number of callers calling to National Tobacco Quitline Services and registrations for tobacco cessation. Sharp increase in calls during the first three months of new health warning and latter diminishing rate of calls is the concern for further study.

8. Effects of ambient air pollution on emergency room visits of children for acute respiratory symptoms in Delhi, India

The present study explored the association between daily ambient air pollution and daily emergency room (ER) visits due to acute respiratory symptoms in children of Delhi. The daily counts of ER visits (ERV) of children (≤ 15 years) having acute respiratory symptoms were obtained from two hospitals of Delhi for 21 months. Simultaneously, data on daily concentrations of particulate matter (PM₁₀ and PM_{2.5}), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), and ozone (O₃) and weather variables were provided by the Delhi Pollution Control Committee. K-means clustering with time-series approach and multipollutant generalized additive models with Poisson link function was used to estimate the 0–6-day lagged change in daily ER visits with the change in multiple pollutants levels. Out of 1,32,029 children screened, 19,120 eligible children having acute respiratory symptoms for ≤ 2 weeks and residing in Delhi for the past 4 weeks were enrolled. There was a 29% and 21% increase in ERVs among children on high and moderate level pollution cluster days, respectively, compared to low pollution cluster days on the same day and previous 1–6 days of exposure to air pollutants. There was percentage increase (95%CI) 1.50% (0.76, 2.25) in ERVs for acute respiratory symptoms for 10 $\mu\text{g}/\text{m}^3$ increase of NO₂ on previous day 1, 46.78% (21.01, 78.05) for 10 $\mu\text{g}/\text{m}^3$ of CO on previous day 3, and 13.15% (9.95, 16.45) for 10 $\mu\text{g}/\text{m}^3$ of SO₂ on same day of exposure. An increase in the daily ER visits of children for acute respiratory symptoms was observed after increase in daily ambient air pollution levels in Delhi.

9. Pulmonary sarcoidosis presenting as hoarseness and mass lesion

A 46-year male, ex-smoker presented with cough and hoarseness for 2-3 months. The CECT chest revealed a left u = pper lobe mass. BAL was negative for AFB, GeneXpert, and malignant cells. The bronchial biopsy showed granuloma with no caseation and infiltration of lymphoid cells. The ultrasound abdomen was normal. The patient was started on prednisolone 0.5 mg/kg. He improved clinic-radiologically. Ex-smoker, middle-aged man with hoarseness and mass lesion on CECT chest is highly suspicious of lung malignancy. Pulmonary sarcoidosis should be kept in the differential diagnosis of unexplained hoarseness and mass lesion as the disease has diverse presentations.

10. Smoking Cessation

Smoking cessation has become an urgent need due to increased morbidity and mortality in developing countries. Smoking cessation depends on various stages of readiness. The stages are (i) not ready (precontemplation), (ii) unsure (contemplation) (iii) ready (preparation) (iv) action and (v) maintenance. Tobacco users who are ready to quit, the 5As are the best intervention in the form of Ask, Advise, Assess, Assist and Arrange. For the

persons not willing to quit 5R strategy is needed. The management is based on pharmacologic management and behavioural counselling. The pharmacological management is based on first line treatment in the form of nicotin replacement therapy (NRT), bupropion and varinicine and second line treatment as clonidine and nortriptalin. There is need of the hour that every health professional should be able to help the tobacco users who want to quit tobacco. Different modalities to help a tobacco user to quit included face to face counseling that may be in group or individually, Mobile Cessation, telephone-based counseling in the form of Quitlines, Web-based interventions, smoking cessations apps, WhatsApp Counselling etc. Best results can be obtained by behavior counseling and social support combined with pharmacotherapy for tobacco cessation.

10. Spectrum of pulmonary aspergillus diseases in post TB lung diseases

Post-Pulmonary TB structural lung disease with cavitation and bronchiectasis favours the growth of Aspergillus. It leads to progressive lung destruction and the persistence of symptoms after successful ATT and can mimic smear-negative PTB. There is lack of prevalence study of this disease from India. Antifungal therapy is very beneficial, as it reduces both morbidity and mortality. The present study is being undertaken to study the occurrence of spectrum of PA in PTBLD. This is a prospective observational study, conducted at one of the tertiary chest institutes of India over a period of one year, after approval from institutional human ethics committee. A total of 60 patients with history of treatment for PTB were recruited. Active PTB were excluded. Diagnosis of PA in were established on the basis of clinical, radiological, microbiological and serological parameters. Based on this, the spectrum of PA viz. CPA, ABPA and IPA were established. The mean age was 47.88 ± 12.89 years with males being 60%. Mean duration of illness was 6.57 ± 5.11 years with mean asymptomatic period of 4.97 ± 7.41 year. Cough and breathlessness (100%) being the most common symptom followed by wheezing (58%). PA was diagnosed in 48% of cases out of which 43% cases were of CPA. The most common subtype of CPA was simple aspergilloma 14 (54%) followed by CCPA 10 (38%), 2CFPA (8%). ABPA was diagnosed in two cases of PA and one case of aspergillus sensitization. None of the case diagnosed as IPA. We found high prevalence of PA among PTBLD, especially CPA. Early recognition and treatment with antifungal has the potential to reduce the morbidity and mortality. There is a need of prospective community-based larger multicentric studies to precisely define the prevalence of these disorders

11. Impact of Pollen Counts and Air Pollution Over Hospital Visits for Respiratory Illnesses in North Delhi Region

Ambient aeroallergens and organic or inorganic air pollutants are known to cause asthma exacerbation and subsequent asthma-related hospital admissions. This study was carried out to study the impact of meteorological factors, air pollution, pollens over hospital visits for respiratory illness in north Delhi region from July 2014 to June 2015. Daily monitoring of pollen grains was done on the roof of the multistorey building (height up to 20m) of the Institute. Meteorological factors including temperature, relative humidity, and precipitations were recorded daily. Daily concentrations of nitric dioxide (NO₂), particulate matter (PM_{2.5}) and sulphur dioxide (SO₂) were also recorded. Number of hospital visits of patients with respiratory illness were assessed in relation to air pollutants (NO₂, SO₂ and PM_{2.5}) and climate change (temperature, relative humidity and rain). During the study period, 113,462 pollen counts were recorded. Two highest peaks of mean pollen counts were observed in post-monsoon season (October-2014) and in the spring season (March 2015). The maximum and minimum pollen concentration was observed in the month of March 2015 (18818/m³) and August 2014 (4731/m³). Our results showed that pollen numbers significantly correlated with respiratory emergency department patient visits ($P=0.037$, $r=0.604$), and temperature and humidity ($P=0.711$, $r=-120$, and ($P=0.670$, $r=-0.137$), respectively. NO₂ significantly correlated with SO₂, respiratory emergency department patient visits and new respiratory OPD patients ($P=0.017$, $r=0.670$, $P=0.031$, $r=0.622$ and $P=0.016$, $r=0.675$, respectively). A statistically significant correlation between rainfall and SO₂ was observed ($P=0.004$, $r=-0.757$) in the present study. The study suggests that significant increase in pollen concentration and air pollutants in the ambient environment causes respiratory illness.

12. Indian Guidelines for Diagnosis of Respiratory Allergy – 2021

Allergy is defined as an immediate type I hypersensitivity reaction to an allergen. It may affect various organs of the body, particularly respiratory system. Common respiratory allergic diseases are asthma and allergic rhinitis. Estimated prevalence of rhinitis in general population is 10%–30% worldwide and 20%–30% of the Indian population suffers from allergic rhinitis. The allergic reaction is triggered by environmental allergens which are substances that cause allergic reaction. Allergens are mainly grouped into inhalant allergens, ingestant allergens, injectant allergens and contactant allergens. Airborne allergens are the main cause of respiratory allergy. The most common airborne allergens causing respiratory allergy are pollen grains, fungal spores, house dust mites, animal allergens and insect allergens. Allergic diseases have significant impact on the quality-of-life, social life, and economy. Limited diagnostic facilities and inadequate knowledge about allergic testing further add on to the burden of the disease. Patient history and clinical examination are primary modalities for identifying an allergic disease and its likely causative allergens. This is necessary because many other non-allergic causes like viral infections, irritants etc may have similar symptoms. The clinical suspicion of allergic sensitization can be confirmed by demonstrating the presence of allergen specific immunoglobulin-E (IgE) antibodies in vivo (skin tests) or in vitro methods. There is a lack of well-defined protocols and guidelines for the diagnosis of respiratory allergy testing in India. Therefore, the evidence-based guidelines for the diagnosis of allergic respiratory diseases were framed in a scientific manner to guide/help the clinicians or practicing physicians all over the country. In addition to the extensive review of the literature, including the previously published relevant national and international guidelines, in particular the Indian studies were reviewed to make consensus, easy to understand and simple recommendations by the Department of Pulmonary Medicine, Vallabhbhai Patel Chest Institute and duly endorsed by the Indian College of Allergy, Asthma and Applied Immunology (ICAAAI), South Asia Association of Allergy, Asthma and Clinical Immunology (SAAAACI), and National Centre of Respiratory Allergy, Asthma and Immunology (NCRAAI).

13. Association between Asthma and Obstructive Sleep Apnoea

Asthma and obstructive sleep apnoea (OSA) are the commonest pulmonary diseases worldwide and contribute to significant morbidity and mortality. Fifty patients aged 18 years and above with moderate to severe asthma, presented to our out-patient clinic during 2016-2017, were screened for OSA using a self-reported STOP BANG Questionnaire. Of these, 30 were found to be at risk of OSA (STOP BANG score >2) and were included in the study. These 30 patients underwent diagnostic polysomnography (PSG), inflammatory markers interleukin (IL)-4, IL-5, IL-6, IL-13, high sensitivity c-reactive protein, fractional exhaled nitric oxide (FeNO) testing. Their quality-of-life and asthma control was evaluated with St. George Respiratory Questionnaire score and Asthma Control Test, respectively. After PSG, OSA, apnoea-hypopnoea index (AHI) >5/h was found in 15/30 (50%) cases with moderate and severe asthma (N=15 each). In moderate asthma 6/15 (40%) and in severe asthma 9/15 (60%) were diagnosed to have OSA. Asthma patients with OSA fared poorly in asthma control test questionnaire and St. George's Respiratory Questionnaire (P=0.01) in comparison to those without OSA. The study indicates high prevalence of OSA among patients of moderate to severe asthma which negatively affects quality of sleep and asthma control that further leads to poor quality-of-life in these patients. Thus, highlighting the need of maintaining high index of suspicion in identifying OSA among patients of moderate to severe asthma.

Postgraduate Training and Teaching

The Institute was initially started with a Diploma Course in Tuberculosis and Chest Diseases (DTCD). Later the MD, DM and PhD courses were started. The Institute continues to conduct the MD, DM and PhD courses in Pulmonary Medicine, Biochemistry, Microbiology, Pharmacology and Physiology. The details of the students currently enrolled in these courses are presented here.

DM Degrees (Ongoing) (Session: 2020-2023)

S. No.	Name (Discipline)	Title of Theses	Supervisor(s)
1.	Dr Rakesh Kumar Singh (Pulmonary Medicine)	Study of Clinical Profile and Outcomes of Patients Admitted in Respiratory Intensive Case Unit at Vallabhbhai Patel Chest Institute, Delhi	Prof. Dr. Raj Kumar Prof. BK Menon Dr Nitin Goel
2.	Dr Aby Abraham (Pulmonary Medicine)	Effect of Home-Based Pulmonary Rehabilitation Quality of Life and Functional Capacity in Patients with Chronic Obstructive Pulmonary Disease	Prof. Raj Kumar Prof. BK Menon Prof. Vishal Bansal Dr Nitin Goel

DM Degrees (1st Year) (Session: 2021-2024)

S. No.	Name (Discipline)
1.	Dr Shubhankar Chakraborty
2.	Dr Libin Mathew

MD Theses (Awarded)

(Session: 2018-2021)

Name	Discipline
Dr Anupam Prakash	Pulmonary Medicine
Dr Rahul Kumar Meena	Pulmonary Medicine
Dr Ahmed Safwan M	Pulmonary Medicine
Dr Rohan Arora	Microbiology

MD Theses (Submitted)

(Session: 2019-2022)

S. No.	Name (Discipline)	Title of Theses	Supervisor
1.	Dr Nitesh Goyal (Pulmonary Medicine)	Assesment of fatigue and quality of life in sarcoidosis patients	Prof. BK Menon Prof. Raj Kumar
2.	Dr. Pallavi SR (Pulmonary Medicine)	Two minutes versus six minutes walk test in detecting xertional oxygen desaturation in moderate and severe COPD.	Dr Nitin Goel Prof. Raj Kumar
3.	Dr Vivek Kumar (Pulmonary Medicine)	Evaluation of one minute sit to stand test, six-minute walk test and body composition analysis to assess exercise capacity in patients with COPD.	Prof. BK Menon Prof. Raj Kumar Dr Vishal Bansal
4.	Dr Kunal Ranjan (Pulmonary Medicine)	Anxiety and depression in COPD patients and its effecton quality of life	Prof. Raj Kumar Dr Nitin Goel
5.	Dr Dhilnaz AS (Pulmonary Medicine)	Evaluation of clinical physiological and radiological parameters and quality of life in patients with bronchiectasis.	Prof. BK Menon Prof. Raj Kumar
6.	Dr Rohan Arora (Microbiology)	A Study of the Phenotypic and Genetic Determinants of Bedaquiline Resistance in Clinical Isolates of <i>Mycobacterium tuberculosis</i>	Prof. Mandira Varma Basil Prof. BK Menon Dr Anuj Bhatnagar Rajan Babu Institute of Pulmonary Medicine and Tuberculosis

MD Theses (Ongoing)

(Session: 2020-2023)

S. No.	Name (Discipline)	Title of Theses	Supervisor
1.	Dr Sharmistha Dutta (Pulmonary Medicine)	Prevalence of Frailty in Chronic Obstructive Pulmonary Disease and its Correlation with Disease Severity and Quality of Life	Dr Nitin Goel Prof. Raj Kumar
2.	Dr Pooja Narwal (Pulmonary Medicine)	To Assess the Prevalence of Restless Leg Syndrome in Patients with COPD	Prof. BK Menon Prof. Raj Kumar Prof. Vishal Bansal
3.	Dr Saatvik Manchanda (Pulmonary Medicine)	Study on Radiological Changes in Post Covid Patients	Prof. BK Menon
4.	Dr Shyam Mohan K (Pulmonary Medicine)	Evaluation of Dietary Pattern and Lifestyle in COPD and their Co – Relation with Disease Severity – A Cross Sectional Analytical Study	Prof. Raj Kumar Dr Nitin Goel
5.	Dr Irshad Ahmad (Pulmonary Medicine)	Evaluation of Residential Symptoms in Post Covid Patients	Prof. BK Menon
6.	Dr Mihir Chauhan (Pharmacology)	Effects of Nitric Oxide Modulators on Airway Inflammation, Bronchial Hyperres. And Oxid. Stress in Experiment. Model of Asthma in Rats	Prof. Kavita Gulati
7.	Dr Anubhav Singh (Microbiology)	A study of candidemia and yeast carriage with special reference to <i>Candida auris</i> in patients with respiratory disorders	Prof. Anuradha Chowdhary
8.	Dr Anmol Guleria (Microbiology)	A study of the phenotypic and genetic determinants of Delamanid resistance in clinical isolates of <i>Mycobacterium tuberculosis</i>	Prof. Mandira Varma Basil Prof. BK Menon Dr Nitin Goel
9.	Dr Jyoti Choudary	Characterization of virulence properties and Molecular typing of clinical and colonizing isolates of <i>Acinetobacter baumannii</i>	Prof. Malini Shariff

MD – Ist Year

(Session: 2021-2024)

Name	Discipline
Dr Pranab Sarma	Pulmonary Medicine
Dr Lehar Batra	Pulmonary Medicine
Dr Anushree Kesarwani	Pulmonary Medicine
Dr Katasani Giridhar Reddy	Pulmonary Medicine
Dr Arathy Jayakumar	Pulmonary Medicine
Dr Karishma Birde	Biochemistry
Dr Navnika Kapoor	Pharmacology

PhD Awarded/Submitted

S. No.	Name (Discipline)	Title of Theses	Supervisor(s)	Status
1.	Mr Sanjesh Saini (Microbiology)	Role of microRNA in pathogenesis of influenza A virus infection	Prof. Malini Shariff Prof. Madhu Khanna	Awarded
2.	Mr Anil Meena (Biochemistry)	A study on CRHR1 and GR genepolymorphism and their correlation with the expression of variousin flammatory cytokines in asthma in North Indian population	Prof. SK Bansal Prof. Vishwajeet Rohil Prof. SK Chhabra and Prof. BK Menon	Awarded
3.	Mr Suresh K Thokchom (Pharmacology)	A clinical study to evaluate the effects of yogic intervention on pulmonary functions, inflammatory markers, oxidative stress and health statusin patients of chronic obstructive pulmonary disease	Prof. Kavita Gulati Prof. BK Menon	Awarded
4.	Mr Ashutosh Singh (Medical Mycology Unit, Department of Microbiology)	Multigene phylogeny and MALDI-TOF MS characterization of melanized fungi and determination of their antifungal susceptibility profiles	Prof. Anuradha Chowdhary	Submitted

PhD (Ongoing)

S. No.	Name (Discipline)	Title of Theses	Supervisor(s)	Year of Registration
1.	Mr Kamal Singh (Pulmonary Medicine)	Indoor air pollution exposures and asthma in children	Prof. Raj Kumar	2017
2.	Mr Chanchal Kumar (Microbiology)	Functional analysis of cell infusion proteins of <i>Mycobacterium tuberculosis</i> as potential target for vaccine development	Prof. Mandira Varma-Basil and Dr Sadhna Sharma Miranda House, University of Delhi	2017
3.	Mr Kamal Srivastava (Microbiology)	Evaluation fo an arrary of PEPPE gene for potential use ina diagnostic assay to identify <i>Mycobacterium tuberculosis</i>	Prof. Mandira Varma-Basil and Dr Sadhna Sharma Miranda House, University of Delhi	2017
4.	Ms Tanushri Nandi (Microbiology)	Anti-influenza activity of immune modulatory peptides	Prof. Madhu Khanna and Prof. Nirupama Trehanpati, Additional Professor, Department of Molecular Immunology, Institute of Liver and Biliary Sciences, New Delhi	2017
5.	Mr Anshul Tanwar (Pharmacology)	Experimental studies on the effects of <i>Withania somnifera</i> extract on type 2 diabetes mellitus induced Alzheimer's disease and the possible mechanisms in rats	Prof. Kavita Gulati	2017
6.	Mr Pankaj Verma (Pharmacology)	Experimental studies to evaluatet he mode of action of traditional herbal agents in bronchial asthma	Prof. Kavita Gulati	2017

Faculty Members Associated as Co-supervisors for MD/PhD Theses of DU and Other Institutions

S. No.	Name (Discipline) and Institution's Name	Title of Theses	Supervisor(s)	Status
1.	Mr. Manoj Kumar Gautam Buddha University (GBU), Greater Noida (UP).	Biochemical and Clinico-Immunologic Characterization of Allergenic Proteins of <i>Periplaneta americana</i> in Asthma Patients	Dr. Rajesh Kumar Gupta, Asst. Professor, Department of Applied Chemistry	Awarded
2.	Ms Varsha Chauhan (PhD, Microbiology) MDU, Rohtak	Efflux Pumps: Contribution to Drug Resistance in Various lineages of <i>Mycobacterium tuberculosis</i>	Dr Sanjay Kumar (MDU, Rohtak) and Dr Mandira Varma-Basil	Ongoing
3.	Ms Smriti Gupta (PhD, Biochemistry) Department of Chemistry SRM University Delhi-NCR, Sonapat (Haryana)	Understanding chronic obstructive pulmonary disease by studying single nucleotide polymorphism in Delhi-NCR population	Dr Ajit Kumar (Department of Chemistry, SRM University, Delhi-NCR, Sonapat, Haryana), Dr Anju Bhatnagar, (Rajan Babu Institute for Pulmonary Medicine & Tuberculosis [RBIPMT], Delhi) and Prof. Viswajeet Rohil	Awarded
4.	Ms. Nishtha Agarwal (PhD, Biomedical Sciences) Department of Biomedical Sciences, ANDC, University of Delhi, Delhi	Antigenic and genetic analysis of influenza virus isolated from clinical samples and exploring the potential antiviral target sites	Dr Gagan Dhawan (Department of Biomedical Sciences, ANDC, University of Delhi, Delhi) and Prof. Madhu Khanna	Ongoing
5.	Mr Nilanshu Manocha (PhD, Biomedical Sciences) Department of Biomedical Sciences, ANDC, University of Delhi, Delhi	Study on the generation of peptide immunogen against dengue virus	Dr Prashant Kumar (Amity Institute of Virology and Immunology, Amity University, Noida (UP) and Prof. Madhu Khanna	Ongoing
6.	Mrs Nitika C. Panakkal (PhD, Medical Imaging Technology), Manipal College of Health Professionals (MCHP), Manipal Academy of Higher Education (MAHE), Manipal	Influence of Low Kilo-Voltage Protocol on Image Quality, Radiation and Iodine Dose for Abdominopelvic Computed Tomography.	Dr Rajagopal K V, Professor, Dept. of Radio-diagnosis & Imaging, Kasturba Medical College & Hospital, MAHE, Manipal and Dr Ravishankar N	Ongoing

Distinguished Visitors



Kayakalp Assessors Visited MRU on 28.12.2021



Ms. Jessica Pahuva, Social Worker, University of Paris visited Department of NCRAAI and interacted with NCRAAI Staff on February 11, 2022



Dr. Umesh Kumar Chairperson & Associate Professor, School of Biosciences IMS – Ghaziabad (University Courses Campus) visited the Department of Biochemistry on March 30, 2021 with Post Graduate and Under Graduate students of IMS to enhance the knowledge of Research methods and techniques in Biochemistry and Clinical Biochemistry

Awards/Honours

Prof. Raj Kumar

- **Editor-in-Chief**, *Indian Journal of Chest Diseases and Allied Sciences*, an official publication of the V.P. Chest Institute and the National College of Chest Physicians (India).
- **Member**, Standing Committee (Students) of the Academic Council, University of Delhi, Delhi, dated 03.06.2021.
- **Member**, Scientific Advisory Committee, New Delhi Tuberculosis Centre, State TB Training & Demonstration Centre, JNU, Delhi on 04.10.2021.
- **Member**, Management Committee, New Delhi Tuberculosis Centre, State TB Training & Demonstration Centre, JNU, Delhi on 04.10.2021.
- **Member**, Selection Committee for Walk-in-Interview for the post of Senior Residents at VPCI, Delhi on 20.12.2021.
- **Member**, Expert committee on Diagnostic Research on Paediatric and Extra-Pulmonary Tuberculosis vide ICMR, India Tuberculosis Research Consortium, Division of ECD Unit TB, Lep., Tribal Health, dated 12.01.2022.
- **Member**, Medical Sciences Courses Admission Committee for the year 2022, University of Delhi, Delhi, dated 07.03.2022.
- **Expert**, selection committee of the Department of Sports and Physical Sciences for promotion of Assistant Professor (Stage II) to Associate Professor (Stage IV) under CAS 2018 on 8th June, 2021 at Principal, Ramjas College, University of Delhi, Delhi, dated 07.06.2021.
- **Advisory Committee**, celebrating 75th year of Excellence in Higher Education and Research – Inaugural Ceremony of ‘Platinum Jubilee’ of LIS Department organised by Department of Library and Information Sciences, University of Delhi on 20.07.2021.
- MoU with National Centre for Disease Control Establishment of National Ref. Laboratory for AMR in fungal pathogen at VPCI on 22.07.2021 by National Centre for Disease Control, DG of Health Services, MoH&FW, New Delhi Govt. of India.
- **Dr. S. Radhakrishnan Memorial Award** – 2021 for commendable contributions made in the field of Medical Education /Teaching on 06.09.2021 by Hansraj College, University of Delhi, Delhi.
- **Examiner**, MD (Supplementary) Practical Examination-September 2021 of Respiratory Medicine at the Faculty of Medicine and Health Sciences, SGT University, Gurugram held on 15.09.2021.
- **Dr. RK Modi Memorial Lecture 2021**, at ICAAICON-2020-21 New Delhi (Virtual).
- **Anti-Discrimination Officer**, University of Delhi extended tenure for a period of one-year w.e.f. 11.11.2021, dated 17.11.2021.
- **Examiner**, Ph.D. viva voce examination of Ms. Rashi Jain on 07th February, 2022 in the Director’s Committee Room, AIIMS, New Delhi.

- University Representative on the Governing Body of Ramjas College for a period of one-year w.e.f. 14.03.2022 wide order University of Delhi, Delhi.

Prof. Malini Shariff

- **Received best poster award** for M.D. Students in the Second Chapter Meet of Indian Association of Medical Microbiologists (IAMM) Delhi Chapter based on the theme Clinical controversies in Infectious diseases, held at Jaypee Siddhartha Hotel, Rajendra Place, New Delhi on 6th August, 2022 for the paper Characterization of Carbapenem resistance and biofilm forming *Acinetobacter baumannii* isolates from clinical and surveillance samples.

Prof. Mandira Varma-Basil

- **Member**, Ethics Committee, Rajan Babu Institute of Pulmonary Medicine and Tuberculosis, Delhi.
- **Executive Member**, Indian Association of Mycoplasmologists.
- **Expert Committee member (ICMR)**, for development of Standard Treatment Workflow for Extrapulmonary TB.

Prof. Anuradha Chowdhary

- **Member**, International Scientific Committee, 10th Advances Against Aspergillosis and Mucormycosis conference (AAAM 10), 2-3 Feb, 2022 (Online).
- **Advisor**, the Clinical and Laboratory Standards Institute (CLSI) Antifungal Subcommittee, 2022
- **Organizing Committee member**, Myco-clinics, the Medical Research Council Centre for Medical Mycology, University of Exeter, UK. 2022.

Prof. Madhu Khanna

- Vallabhbhai Patel Chest Institute, Delhi (Virology Unit) has been designated as centre for COVID-19 testing.
- **CPCSEA Nominee**, Shri Ram Institute, 19 University Road, near Hansraj College, Delhi-110007.

Prof. Anita Kotwani

- **Member**, Technical Advisory Group and Core working Group constituted by Ministry of health & Family Welfare, GOI on Antimicrobial resistance (AMR) to oversee and coordinate policy decisions and activities relating to AMR including development and operationalizing the National Action Plan on AMR.
- **Member**, Advisory panel of Journal of Pharmaceutical Policy and Practice.
- **Member**, National Advisory Group for the UKRI-GCRF One Health Poultry Hub (OHPPH). This interdisciplinary hub is funded by the Global Challenges Research Fund (GCRF) of the UK Research and Innovation (UKRI) to address the larger issue of achieving sustainable global intensification of poultry meat and egg production whilst minimising risk to international public health, with particular focus on South and South East Asia. [www.ohph.org] 2019 onwards.

Prof. Kavita Gulati

- **Awarded Fellowship** of National Academy of Medical sciences (FAMS), convocation at Banaras Hindu University (BHU), Varanasi on November 27, 2021.
- **General Secretary**, Society of Nitric oxide and Allied Radicals (SNOAR).
- **Treasurer**, Delhi Pharmacological Society.
- **Coordinator**, ADR Monitoring Centre (AMC) of Pharmacovigilance Program of India, Indian Pharmacopoeia Commission, India (2017 – continued).
- **Nodal Officer**, Multidisciplinary Research Unit of Department of Health Research, ICMR at VPCI (From May 21, 2019 – continued).

- **Member Expert**, (Pharmacology) IHEC of PGIMER, RML Hospital during meetings on 23.07.2021, 26.08.2021, 23.9.2021, 18.11.2021, 23.12.2021, 16.02.22, 16.03.2022.
- **Member Expert**, Project Evaluation Committee of Indian Council of Medical Research (ICMR) during meetings on 07.7.2021, 09.8.2021, 10.12.2021.
- **Member Expert**, (Pharmacology) IHEC of Dr. B.R. Ambedkar Center for Biomedical Research (ACBR), on 24.08.2021.
- **Member**, Board of studies in Pharmacology, HIMSR meeting held on 14.07.2021.
- **Member**, Area Advisory Board (AAB) meeting to review 8 existing courses of MSc (Nanomedicine) of Amity Centre for Nanomedicine on 02.8.2021.
- **External examiner**, BDS examination at ESIC Dental College, Guru Gobind Singh IP University, Rohini held on 30.9.21 and 01.10.21.
- **Member Expert**, Advisory Committee meeting in DIPAS held on 21.12.21.
- **External examiner**, PhD viva, Delhi Pharmaceutical Sciences Research University (DPSRU) held on 07.12.21.

Prof. Vishwajeet Rohil

- **DBT Nominee**, Institutional Biosafety Committee at Defence Institute of Physiology and Allied Sciences, DRDO.
- **Member**, Work Advisory Committee, VP Chest Institute.
- **Member**, Technical Evaluation Committee, VP Chest Institute.
- **Member**, Condemnation Committee, VP Chest Institute.
- **Member**, Annual Maintenance Committee, VP Chest Institute.
- **Member**, Medical Reimbursement Committee, VP Chest Institute.
- **Internal Expert**, Biosafety Committee, VP Chest Institute.
- **Member**, Committee for Enlistment of Firms under Rate Contract, VP Chest Institute.

Dr Ravishankar N

- Co-author of the publication "Diagnostic accuracy of self-collected vaginal samples for HPV DNA detection in women from South India" which was awarded the prestigious John J. Sciarra IJGO Prize Paper Award for the year 2020. The award was declared in the month of June 2021. The article was published in May 2020 issue of International Journal of Gynecology & Obstetrics (IJGO). All clinical research articles submitted to the IJGO from low and middle-income countries that were published in 2020 were considered for this prize. The paper was chosen from 94 qualifying articles. Selection and review were undertaken by the editors and the decision was endorsed by the Editorial Board of IJGO.

Sponsored Research Projects

S. No.	Faculty Member (Department)	Title of Project	Funding Agency, Date of Sanction/ Implementation and Duration	Grants Received (in Rs.)
1.	Prof. Kavita Gulati Nodal Officer (Pharmacology)	Multidisciplinary Research Unit	DHR, MoHFW January 01, 2014 (Five years) [extended upto March 31, 2021]	412 lakhs
2.	Prof. Kavita Gulati (Pharmacology)	Pharmacological studies on <i>Hedychium spicatum</i> on airway inflammation and remodeling in experimental model of bronchial asthma	ICMR March 24, 2021 (Three Years)	8.70 lakhs
3.	Prof. Kavita Gulati (Pharmacology)	A clinical study to evaluate the effects of yogic intervention on pulmonary functions, inflammatory markers, oxidative stress and health status in patients of chronic obstructive pulmonary disease	AYUSH March 26, 2018 (Three years) [Extended upto September 25, 2022]	31.82 lakhs
4.	Prof. Mandira Varma-Basil (Microbiology)	Development of a rapid phenotypic assay to differentiate between <i>Mycobacterium tuberculosis</i> and non-tuberculosis mycobacteria	ICMR August 20, 2019 (Three years)	17.09 Lakhs
5.	Prof. Anuradha Chowdhary (Medical Mycology Unit) (Microbiology)	Exploration of azole resistance in <i>Candida tropicalis</i> : detection of ERG11 gene mutations and azole resistant genotypes	ICMR October 27, 2020 (Three years)	20.21 Lakhs
6.	Prof. Anuradha Chowdhary (Medical Mycology Unit) (Microbiology)	Genomic insights of azole and terbinafine resistance in clonal trichophyton mentagrophytes/interdigitale spp. complex causing alarming difficult to treat dermatophytosis in North India	SERB-DST February 10, 2021 (Three years)	19.03 Lakhs
7.	Prof. Anuradha Chowdhary (Medical Mycology Unit) (Microbiology)	Multilocus microsatellite typing and antifungals profile of clinical <i>cryptococcus neoformans</i> species complex isolated from patients of cryptococcosis	ICMR November 15, 2017 (Three years)	29.52 Lakhs
8.	Prof. Madhu Khanna (Respiratory Virology)	Triple targeting engineered virus: a tool to counter influenza infection	ICMR October 27, 2020 (Three years)	13.28 Lakhs

S. No.	Faculty Member (Department)	Title of Project	Funding Agency, Date of Sanction/ Implementation and Duration	Grants Received (in Rs.)
9.	Prof. Ritu Kulshrestha (Pathology)	Designing of inhalational polymeric nanoparticle drug delivery systems for the treatment of lung fibrosis	ICMR November 29, 2019 (Three years)	31.26 Lakhs
10.	Prof. Ritu Kulshrestha (Pathology)	Synthesis of polymeric nanoformulations encapsulated with chemotherapeutic agents for lung cancer treatment	VPCI-DHR-ICMR (MRU) December 19, 2019 (Three years)	7.5 Lakhs
11.	Prof. Ritu Kulshrestha (Pathology)	Exploring the potential of G-Quadraplex targeting nanoparticle (GQ-NP) conjugates in lung cancer	VPCI-DHR-ICMR (MRU) December 19, 2019 (Three years)	7.5 Lakhs
12.	Prof. Anita Kotwani (Pharmacology)	Smart regulation for antibiotic use in India: understanding, innovating and improving compliance	DBT September 6, 2018 (Three years)	55.97 Lakhs
13.	Prof. Vishwajeet Rohil	To elucidate the role of Ellagic acid and its derivative via CRTAase in the gene expression profile of lung carcinogenesis	VPCI-DHR-ICMR (MRU) February, 2017 (Three years)	10 Lakhs
14	Prof. Vishal Bansal (Physiology)	Cognitive performance after short duration sub-maximal exercise in young adults	LSRB, DRDO June 27, 2018 (Three years) [till 26 th December, 2021]	20.44 Lakhs
15	Prof. Raj Kumar (Respiratory Allergy and Applied Immunology)	National Tobacco Quit-Line Services	Ministry of Health & Family Welfare (Govt. of India) – QL March 12, 2015 (Three years) [extended upto 2019-20]	1.02 Crores

Fellowships

S. No.	Name of the Fellow (Department) and Name of Supervisor	Title of Fellowship	Funding Agency, Date of Sanction/ Implementation and Duration	Grants Received (in Rs.)
1.	Mr Kamal Srivastava, SRF (Microbiology) <i>(Supervisor: Dr. Mandira Varma Basil)</i>	Evaluation of an array of PE-PPE genes for potential use in diagnostic assay to identify <i>Mycobacterium Tuberculosis</i>	ICMR April 13, 2018 (Three years)	18.97 lakhs
2.	Mr Kamal Singh (Senior Research Fellow) (Pulmonary Medicine) <i>Supervisor: Prof. Raj Kumar)</i>	Analysis of inflammatory biomarkers in Asthmatic Children affected with Indoor Air Pollution (IAP) in Delhi-NCR	ICMR July 20, 2018 (Three years)[extended upto 19.01.2022]	17.91 lakhs
3.	Mr Manoj Kumar (Senior Research Fellow) (Biochemistry) <i>Supervisor: Prof. V. Rohil)</i>	Characterization of proteins differentially expressed in erythrocyte membrane in bronchial asthma identification and purification of one protein and its correlation with severity of the disease	ICMR September 05, 2018 (Three years)	14.26 lakhs
4.	Mr Pankaj Verma (Senior Research Fellow) (Pharmacology) <i>(Supervisor: Dr. Kavita Gulati)</i>	Pharmacological studies to evaluate the anti-inflammatory and immunomodulatory effects of <i>Hibiscus rosasinensis</i> and <i>piper nigrum</i> and their cellular and molecular mechanisms of action in experimental models of Bronchial Asthma.	ICMR January 14, 2019 (Three years)	15.79 lakhs
5.	Ms Hemlata Sharma (Senior Research Fellow) (Pharmacology) <i>(Supervisor: Dr. Kavita Gulati)</i>	Pharmacological studies to evaluate the anti-inflammatory and immunomodulatory effects of <i>Aerva Lanata Linn.</i> in experimental models of Bronchial Asthma and the cellular and molecular mechanism.	ICMR August 23, 2019 (Three years)	15.91 lakhs
6.	Dr Kalpana Pawar (Women Scientist) (Medical Mycology Unit, Microbiology) <i>(Supervisor: Dr. Anuradha Chowdhary)</i>	Mechanism of Multidrug Resistance and Pathogenesis in <i>Candida glabrata</i>	DHR-MoHFW March 12, 2020 (Three years)	23.04 lakhs

Conferences/Symposia/Seminars/Workshops/CMEs

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
1.	Prof. Raj Kumar	Chairperson	Indian College of Allergy, Asthma & Applied Immunology (ICAAI) in association with Bengaluru Allergy Foundation (BAF)	Allergy Asthma Chat Virtual May 16, 2021
2.	Prof. Raj Kumar	Lecture on Psychological Impact of Corona Virus in India	Department of Chemistry, Rajdhani College, University of Delhi	Online National Conference on COVID-19 and its psychological effects Virtual April 30, 2021
3.	Prof. Raj Kumar	Lecture on COVID-19 in tobacco Control	Kirori Mal College (National Service Scheme) in collaboration with VP Chest Institute, University of Delhi, National Tobacco Quitline Services	Webinar on Challenges in Tobacco Control during COVID-19 Pandemic, Delhi Virtual March 19, 2021
4.	Prof. Raj Kumar	Guest lecture on Food Allergy	Dept. of Pulmonary Medicine, ERA'S Lucknow Medical College & Hospital, Lucknow under the aegis of ICAAAI (North Zone)	Webinar on World Allergy Week Virtual June 22, 2021
5	Prof. Raj Kumar	Participated	National Allergy Centre, East Patel Nagar, New Delhi	Inauguration of 22 nd Workshop of Allergy Testing and Immunotherapy Training Program Delhi July 29-31, 2021
6	Prof. Raj Kumar	Lecture on Allergic health problems related to climate change and its action plans	National programme on Climate change and Human health (NPCCHH)	Online training for SNO-CC & DNO-CC Virtual August 10-13, 2021
7	Prof. Raj Kumar	Participated	Dr. Bhim Rao Ambedkar College, University of Delhi, Delhi	Medical Committee BRAC on health awareness Virtual October 7, 2021

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
8.	Prof. Raj Kumar	Participated Panel Discussion on Way ahead for a robust public health response/strategy for COPD in India	Union South-East Asia (USEA)	World COPD Day 2021, Union South-East Asia (USEA), The Lalit, Barakhamba, New Delhi November 25, 2021
9.	Prof. Raj Kumar	Participated Panel Discussion on Multi – model approach for effective smoking cessation	National College of Chest Physician, Indian Association for Bronchology and Pulmonary Foundation	RESPICON INDIA – 2021, Delhi December 11, 2021
10.	Prof. Raj Kumar	Speaker on Role of Lifestyle in Fitness Management	Bhaskaracharya College of Applied Sciences in association with Dept. of Physical Education and Sports Sciences, University of Delhi	Short term certificate course on Fitness Management Delhi July 18 to September 12, 2021
11.	Prof. Raj Kumar	Historical Roots of Bharat: Ancient India – Vishwa Guru' during Vishwa Guru Bharat: Exploring the Glorious Past, Promising Present and the Future Roadmap	VPCI	National Seminar – Vishwa Guru Bharat: Exploring the Glorious Past, Promising Present and the Future Roadmap VPCI, Delhi March 23-24, 2022
12.	Prof. Raj Kumar	Lectures on Indian Guidelines for diagnosis of respiratory Allergy Skin Prick Test – Practical Demonstration and Cases Food allergy in clinical practice How to setup allergy clinic	NCRAAI, VPCI, Delhi	Certificate course on Diagnosis of Allergy and Immunotherapy VPCI, Delhi March 11-13, 2022
13.	Prof. Malini Shariff	Participated	Indian Association of Medical Microbiologists (IAMM), Delhi Chapter	Webinar on Rise of the titans after COVID- opportunistic Infections Virtual May 22, 2021

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
14.	Dr Malini Shariff	Participated	Indian Association of Medical Microbiologists (IAMM), Delhi Chapter	Symposium on Sepsis management- what has changed? on the World sepsi) Virtual September 13, 2021
15.	Prof. Malini Shariff	Participated	Organized by Atal Bihari Vajapayee Institute of Medical Sciences (ABVIMS) & Dr Ram Manohar Lohia Hospital under IAMM Delhi Chapter	Scientific Program Immunology & Autoimmune Disorders: An Update Delhi October 9, 2021
16.	Prof. Mandira Varma-Basil	Guest Lecture on Nontuberculous Mycobacteria – Challenges in Diagnosis and Management	PGI Chandigarh	TBCON 2022 Chandigarh March 26, 2022
17.	Prof. Mandira Varma-Basil	Presented an E-poster on Analysis of PE-PPE gene family: Search for a novel diagnostic target for <i>M. tuberculosis</i> complex	European Society of Mycobacteriology (ESM)	The ESM Virtual Congress 2021 Virtual July 28-29, 2021
18.	Prof. Mandira Varma-Basil	Presented a poster on Nontuberculous mycobacteria isolated from environmental sources in North Delhi, India	Department of Chemistry, Galgotias University	Advanced material for next generation applications Galgotias University, Noida September 29, 2021
19.	Prof. Mandira Varma-Basil	Presented an E-poster on Comparison of an in-house Duplex PCR assay with TB-LAMP and GeneXpert MTB/RIF for identification of <i>M. tuberculosis</i> directly in clinical samples	ABVIMS & Dr. Ram Manohar Lohia Hospital	Virtual Chapter meeting of IAMM, MICROCON Delhi Chapter Virtual October 9, 2021
20.	Dr Mandira Varma-Basil	Presented an E-poster on Phenotypic and Genotypic characterization of bedaquiline resistance in clinical isolates of <i>M. tuberculosis</i> in Delhi	Executive Committee, Indian Association of Medical Microbiologists Delhi Chapter	12 th Annual conference of IAMM, Delhi Chapter 2021 Delhi November 25-27, 2021
21.	Prof. Mandira Varma-Basil	Presented a poster on Non-tuberculous mycobacteria isolated from mouthwash samples of healthy individual in Delhi	The Department of Medical Microbiology, PGIMER, Chandigarh	TBCON-2022 Tuberculosis: A Road toward Elimination Chandigarh March 25-26, 2022

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
22.	Prof. Kavita Gulati	Invited talk on Yoga in Respiratory Health and Immunity	Central Council for Research in Yoga and Naturopathy	Webinar on the occasion of 1week celebrations of 7th International Day of Yoga -2021 Virtual June 15, 2021
23.	Prof. Kavita Gulati	Participated	Dept. of Pharmacology, Chettinad Academy of Research and Education	National Conference on Drug Targets and Newer Drugs for COVID-19 Virtual June 28, 2021
24.	Prof. Kavita Gulati	Participated	Department of Biostatistics, VPCI	National workshop on Biomedical Research Methods Virtual September 2-5, 2021
25.	Prof. Kavita Gulati	Participated	Regional Training Centre, Department of Clinical Pharmacology & Therapy, NIMS in collaboration with IPC, PvPI	Workshop Training on Signal Detection and Assessment in Pharmacovigilance Virtual September 3, 2021
26.	Prof. Kavita Gulati	Participated	IPC, PvPI, MHFW	National CME cum Workshop on Advance Course in Pharmacovigilance and Drug Safety Delhi September 18, 2021
27.	Prof. Kavita Gulati	Delivered a talk on Pharmacovigilance: basic concepts and application	VPCI	CME on Pharmacovigilance – a step towards Patient Safety VPCI, Delhi September 21, 2021
28.	Prof. Kavita Gulati	Participated	JSS Medical college & hospital Mysuru	Webinar on Patient Safety Virtual September 23, 2021
29.	Prof. Kavita Gulati	Participated	IPC, MHFW, PvPI	AMCs Coordinator Meet on Strategies to enhance ADR reporting Virtual November 12, 2021
30.	Prof. Kavita Gulati	Participated	National Academy of Medical Sciences (NAMS)	NAMSCON-2021 Shatabdi Krishi Preksha Grih, Institute of Agricultural Sciences, BHU, Varanasi November 26-27, 2021

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
31.	Prof. Kavita Gulati	Participated	National Academy of Medical Sciences (NAMS)	National Deliberation on Front of Pack Labelling (FOPL) as an essential. policy tool for reducing burden of Non-Communicable Diseases in India Virtual February 25, 2022
32.	Prof. Kavita Gulati	Attended Professor S.K. Gupta Oration in Clinical Research Topic: Atherosclerosis Since Antiquity	DPSR University, New Delhi	S.K. Gupta Oration in Clinical Research DPSR University, Pushp Vihar, New Delhi March 25, 2022
33.	Prof. Kavita Gulati	Invited lecture on Informed Consent including vulnerable subjects during at Workshop on Ethics in Human Health Research and Good Clinical Practices	RML Hospital	ABVIMS, & RML Hospital Delhi March 28, 2022
34.	Prof. Kavita Gulati	Delivered a talk on Hepatoprotective and immunomodulatory effects of a Unani polyherbal preparation and the possible mechanisms in anti-TB drugs induced liver damage in rats	Conference Mind	2 nd International Webinar on Traditional & Alternative Medicine Virtual February 24-25, 2022
35.	Mihir Chauhan (Supervisor: Prof. Kavita Gulati)	Presented a paper on Nitric Oxide modulation in Asthma: A Fork in the Road?	Bio Genesis Health Cluster, Bengaluru	World Congress of Pharmacology 2022 Bengaluru January 30, 2022
36.	Hemlata Sharma (Supervisor: Prof. Kavita Gulati)	Presented a paper on Modulatory effects of <i>Aerva Lanata Linn.</i> on airways remodelling in an experimental model of asthma in rats	Bio Genesis Health Cluster, Bengaluru	World Congress of Pharmacology 2022 Bengaluru January 30, 2022
37.	Prof. Vishwajeet Rohil	Participated	Amity Institute of Molecular Medicine and Stem Cell Research, Amity University Uttar Pradesh, Noida	5-Day Faculty Enrichment Programme (FEP) on Cutting Edge Science in Cellular and Molecular Biomedicine Virtual July 27-31, 2021
38.	Prof. Vishwajeet Rohil	Participated	Department of Biostatistics, VPCI	National workshop on Biomedical Research Methods Virtual September 2-5, 2021

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
39.	Prof. Vishwajeet Rohil	Participated	Medical Education & Learning Point (MELAP), New Delhi	Training Programme on Quality Management Systems and Internal Audit in Medical Laboratories as per ISO 15189:2012 Virtual September 8-11, 2021
40.	Prof. Vishwajeet Rohil	Participated	Medical Education and Learning Point (Delhi Medical Council credit hrs)	Flowcytometry, Fundamentals & Case Discussion Virtual January 15, 2022
41.	Prof. Vishwajeet Rohil	Participated	BMJ, India & South Asia	Management of Respiratory Systems in long Covid Virtual February 24, 2022
42.	Prof. Vishwajeet Rohil	Participated	Department of Microbiology, All India Institute of Medical Sciences, Bibinagar, Hyderabad, Telangana	VIROCON 2021 National Conference of Virology on Emerging and Reemerging Viral Diseases-Climate Change Impact and Mitigation Virtual March 26-28, 2022
43.	Dr Jayeeta Bhadra	Participated	Bio-Rad Laboratories	EQAS: expert panel discussion covering various departments of Laboratory medicine & Blood Bank (Solution Hour) Virtual August 13, 2021
44.	Dr Jayeeta Bhadra	Participated	Association of Medical Biochemists of India (AMBI) West Bengal chapter	CME on the topic Immunofluorescence: Get switched on Virtual August 14, 2021
45.	Dr Jayeeta Bhadra	Delivered a lecture on preparation of research proposal	Department of Biostatistics, VPCI	National workshop on Biomedical Research Methods Virtual September 2-5, 2021
46.	Dr Jayeeta Bhadra	Participated	Labroots	Un-conventional QC: Implementing Appropriate QC Design Strategies in Your Lab Virtual November 18, 2021

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
47.	Dr Jayeeta Bhadra	Presented a scientific poster on topic Directed Remodelling of the mouse gut microbiome inhibits development of atherosclerosis	Association of Clinical Biochemists of India	ACBICON 2021 Virtual December 12-15, 2021
48.	Prof. Ritu Kulshrestha	Presented an E-poster on Tumor cell phagocytosis (cannibalism) in lung cancer: possible biomarker for tumor immune escape and prognosis	Bioevents	The American Virtual Conference on Lung Cancer Virtual December 7, 2021
49.	Prof. Ritu Kulshrestha	Participated	Department of Biostatistics, VPCI	National workshop on Biomedical Research Methods Virtual September 2-5, 2021
50.	Prof. Vishal Bansal	Invited lecture on Overview on Pulmonary Rehabilitation & Setting up of a Pulmonary Rehab Clinic	Department of Respiratory Medicine, Chettinad Hospital & Research Institute, Chengalpattu, Tamil Nadu	National e-Conference: CHETPULMO REHABCON-2021 Virtual December 22, 2021
51.	Prof. Vishal Bansal	Invited lecture on Role of Pulmonary Rehabilitation in Chronic Respiratory Diseases	Morarji Desai National Institute of Yoga, New Delhi	Weekly webinar for orientation of students and practitioners of MDN Institute of Yoga Virtual May 28, 2021
52.	Prof. Anuradha Chowdhary	Delivered a talk on Indian Epidemic of drug resistant dermatophytosis	Canadian Institute for Advance Research-Fungal Kingdom Threats and Opportunities	Canadian Institute for Advance Research meeting Virtual June 16, 2021
53.	Prof. Anuradha Chowdhary	Delivered a talk on Emerging rare yeasts in outbreaks	Aberdeen University, Scotland UK	Trends in Medical Mycology, Aberdeen, Scotland UK Virtual October 9, 2021
54.	Prof. Anuradha Chowdhary	Delivered a talk on from where does <i>Candida auris</i> come?	Sackler School of Medicine, Tel Aviv University, Israel	Post Graduate Course of the Center for Continuing Medical Education at the Sackler School of Medicine, Tel Aviv University, Israel Virtual December 19, 2021

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
55.	Prof. Anuradha Chowdhary	Delivered a talk on Antifungal resistance in <i>Candida auris</i> -an emerging threat	Society of Biological Chemists (SBC), India	90 th Annual meeting of Society of Biological Chemists (SBC), India Virtual December 17, 2021
56.	Prof. Anuradha Chowdhary	Chairperson on Antifungal Resistance in Aspergillus – Not as Simple as First Thought on Wednesday	Advances Against Aspergillosis and Mucormycosis	10 th Advances Against Aspergillosis and Mucormycosis Conference Virtual February 2, 2022
57.	Prof. Anuradha Chowdhary	Delivered a talk on <i>Candida auris</i> : Understanding the recent emergence and spread of MDR Fungal pathogen	NIMR & MERA India	NIMR & MERA India Lecture series on Infectious Diseases Virtual March 29, 2022
58.	Dr Uma Tyagi	Participated	Maitreyi College Library, DU	National Webinar on Problems & Challenges of Plagiarism Detection in Non-Unicode Fonts Delhi August 9, 2021
59.	Dr Uma Tyagi	Delivered a lecture on Review of Literature – Literature Search, Keywords, Medical Subheadings	Department of Biostatistics, VPCI	National workshop on Biomedical Research Methods Virtual September 2-5, 2021
60.	Dr Uma Tyagi	Participated as an external examiner	IGNOU Regional Centre Ranchi	Classification and Cataloging (Online viva-voce examination in r/o BLIE-227) Virtual September 18-19 & 25-26, 2021
61.	Dr Nitin Goel	Delegate	Indian College of Allergy Asthma and Applied Immunology	54 th and 55 th Indian College of Allergy Asthma and Applied Immunology Conference (ICAAAICON) 2020 & 2021 Virtual October 28-31, 2021
62.	Dr Nitin Goel	Delegate	Indian Chest Society and National College of Chest Physicians (India)	23 rd Joint National Conference on Pulmonary Diseases (NAPCON 2021) Varanasi March 31 to April 3, 2022

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
63.	Dr Nitin Goel	Faculty Lecture on Rhinitis Phenotypes	VPCI	Certificate course on Diagnosis of Respiratory Allergy and Immunotherapy VPCI, Delhi March 11-13, 2022
64.	Dr Nitin Goel	Joint Organizing Secretary	VPCI	National workshop on Biomedical Research Methods Virtual September 2-5, 2021
65.	Dr Nitin Goel	Joint Organizing Secretary	VPCI	CME on "Pharmacovigilance – A step towards patient safety" VPCI, Delhi September 21, 2021
66.	Dr. S.R. Pallavi Supervisor: Dr. Nitin Goel Co-Supervisor: Prof. (Dr.) Raj Kumar	Poster Presentation on Evaluation of 2-minute vs 6-minute walk test in moderate and severe COPD & Predictors of exertional desaturation on walk tests	Indian Chest Society and National College of Chest Physicians (India)	23 rd Joint National Conference of Indian Chest Society and National College of Chest Physicians (India), NAPCON-2021 Varanasi February 1-4, 2022
67.	Dr. Kunal Ranjan Supervisor: Prof. (Dr.) Raj Kumar Co-Supervisor: Dr. Nitin Goel	Poster Presentation on Anxiety and depression in COPD and its impact on quality of life	Indian Chest Society and National College of Chest Physicians (India)	23 rd Joint National Conference of Indian Chest Society and National College of Chest Physicians (India), NAPCON-2021 Varanasi February 1-4, 2022
68.	Dr Parul Mrigpuri	Faculty lecture on Allergen vs Irritant in Webinar on Allergy Vaccines and Guidance on Adverse reactions	Indian College of Allergy, Asthma and clinical Immunology (ICAAI)	APAAACI Allergy Week Virtual April 14, 2021
69.	Dr Parul Mrigpuri	Organiser	VPCI	Observance of World Health Day under Swachhta Pakhwada VPCI, Delhi April 7, 2021
70.	Dr Parul Mrigpuri	Faculty lecture on cough etiquettes and proper use of face mask	VPCI	Observance of World Health Day under swachhta Pakhwada VPCI, Delhi April 7, 2021
71.	Dr Parul Mrigpuri	Faculty lecture on Allergy and climate change	National Programme for Climate Change and Human Health (NPCCHH), NCDC	Virtual Training programme of State programme officials on priority Climate Sensitive Health issues under the NPCCHH Programme Virtual August 10-13, 2021

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
72.	Dr Parul Mrigpuri	Special invitee and observer for the online webinar events	National Programme for Climate Change and Human Health (NPCCHH), NCDC	International Day of Clean Air for blue skies under the NPCCHH programme, MoHFW Virtual September 6-7, 2021
73.	Dr Parul Mrigpuri	Participated	VPCI	National workshop on Biomedical Research Methods Virtual September 2-5, 2021
74.	Dr Parul Mrigpuri	Faculty lecture on Distinguish between Allergen and Irritant	Indian College of Allergy, Asthma and clinical Immunology (ICAAI)	ICAAICON 2020-21 Virtual October 28-31, 2021
75.	Dr Parul Mrigpuri	Practical hands-on training in SPT SPT: Proficiency testing Faculty lecture on Allergen and Irritant: which is relevant Clinical case discussion history, investigation, interpretation and Immunotherapy	VPCI	Certificate course on Respiratory Allergy and Immunotherapy VPCI, Delhi March 12-13, 2022
76.	Dr Sonam Spalgias	Faculty lecture on NIV in chronic stable lung diseases	VPCI	Training Course on Pulmonary Rehabilitation VPCI, Delhi March 10, 2021
77.	Dr Sonam Spalgias	Faculty lecture on Management of Anaphylaxis	Indian College of Allergy, Asthma and clinical Immunology (ICAAI)	ICAAICON 2020-21 Virtual October 28-31, 2021
78.	Dr Sonam Spalgias	Faculty lecture on Spirometry	Department of Anthropology, Delhi University	International Workshop on Physiological Anthropology in Public Health Virtual January 21, 2022
79.	Dr Sonam Spalgias	Practical hands-on training in SPT SPT: Proficiency testing Faculty lecture on Anaphylaxis Clinical case discussion history, investigation, interpretation	NCRAAI, VPCI	Certificate course on Diagnosis of Allergy and Immunotherapy VPCI, Delhi March 11-13, 2022
80.	Dr Sonam Spalgias	Chairperson in a session on Early Detection Expert view on topics Panel discussion on Sleep Disorders Case Based Discussion	Indian Chest Society and National College of Chest Physicians (India)	23 rd Joint National Conference on Pulmonary Diseases (NAPCON 2021) Varanasi March 31 to April 3, 2022

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
81.	Dr Sonam Spalgias	Oral paper presentation on the topic Pulmonary function test in Hypersensitivity Pneumonitis	Indian Chest Society and National College of Chest Physicians (India)	23 rd Joint National Conference on Pulmonary Diseases (NAPCON 2021) Varanasi March 31 to April 3, 2022
82.	Dr Dhilnaz S Co-authors: Dr Sonam Spalgias and Prof. Raj Kumar	Poster Presentation on the topic Pulmonary Sarcomatoid Carcinoma - "A Rare Case of Massive Pleural Effusion"	Indian Chest Society and National College of Chest Physicians (India)	23 rd Joint National Conference on Pulmonary Diseases (NAPCON 2021) Varanasi March 31 to April 3, 2022
83.	Dr Sonal Co-authors: Dr Sonam Spalgias and Prof. Raj Kumar	Poster presentation on the topic Isolated Pulmonary Cryptococcus mimicking pulmonary Tuberculosis	Indian Chest Society and National College of Chest Physicians (India)	23 rd Joint National Conference on Pulmonary Diseases (NAPCON 2021) Varanasi March 31 to April 3, 2022
84.	Dr Sonam Spalgias	Joint Organizing Secretary	VPCI	Training Course on Pulmonary Rehabilitation VPCI, Delhi March 10, 2021
85.	Dr Siddharth Raj Yadav	Presented an e-poster on COVID-19 lockdown and improvement in air quality index: A tale of two cities	Indian Chest Society and National College of Chest Physicians (India)	23 rd Joint National Conference of Indian Chest Society and National College of Chest Physicians (India), NAPCON-2021 Varanasi February 1-4, 2022
86.	Dr Siddharth Raj Yadav	Delivered a lecture on Tool Development	Department of Biostatistics, VPCI	National workshop on Biomedical Research Methods Virtual September 2-5, 2021
87.	Dr Siddharth Raj Yadav	Delivered a public lecture on public lecture on sleep hygiene	VPCI	Swachhata Pakhwada 2021 VPCI, Delhi April 1-15, 2021
88.	Dr Tanuja	Faculty lecture on donning & doffing of PPE	VPCI	Observance of World Health Day under swachhta Pakhwada VPCI, Delhi April 7, 2021
89.	Dr Ravishankar N	Organizer	VPCI	National Workshop on Biomedical Research Methods Virtual September 2-5, 2021
90.	Dr Ravishankar N	Invited lecture on Sample Size Estimation	Manipal College of Nursing (MCON), Manipal	Webinar on Quantitative Nursing Research Virtual April 22-24, 2021

S. No.	Faculty Member	Role/Topic	Organiser(s)	Conference, Place and Date
91.	Dr N Ravishankar	Invited lecture on Hypothesis Testing and Statistical Tests	Department of Epidemiology, The Tamil Nadu Dr.M.G.R Medical University	Workshop on Research Methodology and Biostatistics Virtual September 14-16, 2021
92.	Dr N Ravishankar	Invited lecture on Meta-analysis and use of Review Manager software	Manipal college of Nursing (MCON) and IOE Social Research Institute, UCL Institute of Education, University College London, UK	Indo-UK workshop on Systematic Review and Meta-analysis Virtual November 22-26, 2021
93.	Dr N Ravishankar	Guest lecture on Sample Size Determination	Sri Siddhartha Dental College & Hospital, Tumkur	Webinar on research techniques Virtual January 29, 2022
94.	Dr N Ravishankar	Invited lecture on Meta-analysis and use of Review Manager software	Cochrane India Affiliate and Institute of Dental Sciences Siksha 'O'Anusandhan	Meta-analysis Workshop and Virtual February 4-5, 2022

Participation in Advanced and Specialised Training Programme by Faculty Members

S. No.	Participant (Department)	Course Title/ Topic	Training Duration	Host
1.	Dr Ravishankar N (Biostatistics)	Online Training Course on Demographic Data Analysis for Health Personnel	August 23-25, 2021	National Institute of Health and Family Welfare, New Delhi
2.	Prof. Kavita Gulati (Pharmacology)	CME on Pharmacovigilance – a step towards Patient Safety	September 21, 2021	VPCI
3.	Prof. Kavita Gulati (Pharmacology)	Invited talk on Informed consent including vulnerable subjects in Workshop on Ethics in Human Health Research and Good Clinical Practices	March 28, 2022	ABVIMS & RML Hospital
4.	Prof. Vishwajeet Rohil (Biochemistry)	Training Programme on Quality Management Systems and Internal Audit in Medical Laboratories as per ISO 15189	September 8-11, 2021	Medical Education & Learning Point (MELAP), New Delhi
5.	Dr Uma Tyagi	Two-Week Interdisciplinary Workshop/ Refresher Course on Library Sciences on Skill & Expertise in Digital Information Landscape	April 10-25, 2021	Teaching Learning Centre, Ramanujan College, DU under the aegis of Ministry of Education, Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT) in collaboration with DULS, DU
6.	DrJayeeta Bhadra (Biochemistry)	Successfully completed the Basic course in Biomedical research as mandated by National Medical Commission (NMC)	March, 2022	Indian Council of Medical Research (ICMR) and National Institute of Epidemiology (NIE)
7.	Dr Tanuja (Anaesthesiology)	BLS & ACLS provider course of American Heart Association	July 11-13, 2022	Faculty of critical care and emergency medicine Sri Ganga Ram Hospital

Short-term Specialised Training Imparted by Faculty Members

S. No.	Name, Subject and University/ Institute/College	Course Title/ Topic	Faculty Member (Department)	Period
1.	Ms. Shreya Dixit, (Biotechnology) Amity University, Noida (Uttar Pradesh)	B.Tech + M. Tech (Biotechnology)	Prof. Kavita Gulati (Pharmacology)	September 15, 2021 to October 30, 2021
2.	Gayathri J, MSc (Microbiology) Department of Biosciences, Jamia Millia Islamia (Delhi)	Phenotypic and genotypic determination of bedaquiline resistance in clinical isolates of <i>Mycobacterium tuberculosis</i>	Prof. Malini Shariff (Microbiology)	January to May, 2021
3.	Naushad Ali, MSc (Microbiology) Central University of Haryana (Haryana)	Characterization of Phenotypic and Molecular determinants of linezolid resistance in <i>Mycobacterium tuberculosis</i>	Prof. Mandira Varma- Basil (Microbiology)	February to June, 2022
4.	Komal Chhikara, MSc (Microbiology) Amity University, Noida (Uttar Pradesh)	To study the role of efflux pump gene VPVC1 in drug resistance to Ethambutol in <i>Mycobacterium tuberculosis</i>	Prof. Mandira Varma- Basil (Microbiology)	December 2021, to April 2022
5.	Priyanshi Pande, MSc (Microbiology) Amity University, Noida (Uttar Pradesh)	Cloning and expression of candidate genes of MCE operon of <i>M. tuberculosis</i>	Prof. Mandira Varma- Basil (Microbiology)	December 2021, to April 2022
6.	Mr. Bhupender Sahu, BSc (H) (Biotechnology) Institute of Management Studies, Ghaziabad (Uttar Pradesh)	Student of B.Sc. (H) Biotechnology	Prof. Vishwajeet Rohil (Biochemistry)	February 1 -28, 2022
7.	Ms. Janvi Sharma, BSc (H) (Biotechnology) Institute of Management Studies, Ghaziabad (Uttar Pradesh)	Student of B.Sc. (H) Biotechnology	Prof. Vishwajeet Rohil (Biochemistry)	February 1 -28, 2022
8.	Mr. Satyam Bathla, BSc (H) (Biotechnology) Institute of Management Studies, Ghaziabad (Uttar Pradesh)	Student of B.Sc. (H) Biotechnology	Prof. Vishwajeet Rohil (Biochemistry)	February 1 -28, 2022

Glimpses of Events held at VPCI

Observance of SwachhtaPakhwada (April 1-15, 2021)

The observance of Swachhta Pakwada was commenced with Swachhta pledge taken by Director, Faculty, Staff and Students of Vallabhbhai Patel Chest Institute



Pledge Undertaking: Day 1



Cleaning of Residential Flats – officers flats at Maurice Nagar: Day 2



Cleaning of Residential Flats –Maurice Nagar and Probyn road: Day 3



Cleaning of Residential Flats – Dhaka Complex: Day – 4



Cleaning of Periphery /Other Areas of VPCI & Patel Niwas: Day – 5



Mock Drill for Fire Safety Training by personnel from Delhi fire services: Day – 6

Vallabhbhai Patel Chest Institute Celebrated World Health Day under Swachhta pakhwada at Paintal Memorial Golden Jubilee Auditorium, VPCI on 7th April, 2021. Prof. Raj Kumar, Director, VPCI inaugurated the program. Dr Parul Mrigpuri, Dr Siddharth Raj Yadav, Dr Tanuja Trivedi & Mrs Anjali Malik delivered the lectures on Cough Etiquette and proper use of mask, Bronchial Hygiene, Sleep Hygiene, Donning & Doffing of PP Erespectively during the programme.



World Health Day: Day – 7



Public Distribution of Soaps / Sanitizers/ leaflets: Day -8

Vallabhbhai Patel Chest Institute conducted Painting/ Drawing competition for the staff and their family on the theme of “Swachhta Pakhwada: Poster making competition” as a part of activities / initiatives to be undertaken in connection with Swachhta Pakhwada Celebrations – 2021 on 9th April, 2021 from 2:00PM to 5:00PM in Basement, Paintal Memorial Golden Jubilee Auditorium, VPCI. The Staff of VPCI and their family members participated in the Competition. Prof. Raj Kumar, Director, VPCI, inaugurated the event.



Poster Making Competition: Day – 9



Cleaning of Outer Area of VPCI: Day – 10

Vallabhbhai Patel Chest Institute conducted Essay Writing Competition (English / Hindi) for children on the theme of “Swachhta Pakwada 2021: Essay Writing Competition” as a part of activities/initiatives to undertaken in connection with Swachhta Pakwada Celebrations – 2021 on 11th April, 2021 from 11:00 AM to 12:00 PM on an online mode. Prizes were distributed to the winners

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SWACHHTA PAKHWADA CELEBRATIONS-2021
ESSAY WRITING COMPETITION / निबंध-लेखन प्रतियोगिता

NOTICE

Dated: 11.04.2021

Due to recent COVID-19 restrictions, now Essay Writing Competition will be held in the online mode on the same date and time. Links and other details will be shared to the all participants.

(Rajesh Mehta)
Coordinator

VALLABHBHAI PATEL CHEST INSTITUTE
UNIVERSITY OF DELHI, DELHI-110007

ESSAY WRITING COMPETITION / निबंध-लेखन प्रतियोगिता
SWACHHTA PAKHWADA CELEBRATIONS-2021

RESULT OF ESSAY WRITING COMPETITION (ONLINE MODE) HELD ON 11.04.2021

CATEGORY-1: CLASS III to V

POSITION	NAME OF PARTICIPANTS	NAME OF VPCI EMPLOYEE / STUDENT
FIRST	KSH NANDITA DEVI	KH INDUREKHA
SECOND	UDAYAN MEHTA	RAJESH KUMAR MEHTA
THIRD	VISHAKHA SHOURYA SHARMA	VIJAY KUMAR TARA CHAND SHARMA
CONSOLATION	JAYUSHI YAGHARTH BATHEM	SONU ANAND KUMAR BATHEM

CATEGORY-2: CLASS VI to VIII

POSITION	NAME OF PARTICIPANTS	NAME OF VPCI EMPLOYEE / STUDENT
FIRST	PRATYUSH	PAVINDRA KUMAR
SECOND	BENESSARIA BENYO	DESSY BENYO
THIRD	RACHHA SAKSHAM DEV SHAURYAVI	ROHTASH KUMAR KAPIL DEV SONU

CATEGORY-3: CLASS IX to XII

POSITION	NAME OF PARTICIPANTS	NAME OF VPCI EMPLOYEE / STUDENT
FIRST	PARTH TOMAR	JOGENDRA SINGH
SECOND	DISHA SAZA PARVEEN	ROHTASH KUMAR
THIRD	SAMBHAVI MEHTA LAVANYA DEV	JAYUS KHAN RAJESH KUMAR MEHTA KAPIL DEV

Essay Writing Competition: Day – 11

Vallabhbhai Patel Chest Institute organized Lecture on “Fire Fighting & Fire Safety” on 12th April, 2021 at paintal Memorial Golden Jubilee Auditorium. Dr CM Sachideva & Mr Sriram Oberoi delivered lectures on fire fighting & fire Safety.



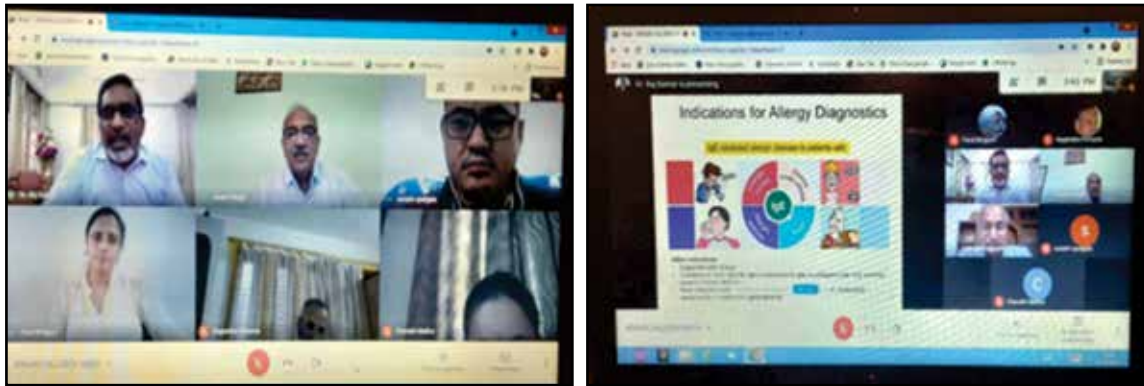
Lecture on Fire Fighting & Fire Safety: Day – 12

A team of Biomedical Waste Management visited/Inspected various departments of the Institute during Swacchta Pakhwada on 13th April, 2021.



Biomedical Waste Management Departmental Inspection: Day – 13

Vallabhbhai Patel Chest Institute organized “APAAACI Allergy Week” in association with Indian College of Allergy Asthma & Applied Immunology (ICAAAI) on 13th April, 2021 on the theme “Allergy Vaccines and Guidelines on Adverse Reaction”. Prof. Raj Kumar, Director, VPCI, Dr AB Singh Secretary ICAAI, Dr Nagendra Prasad, BAC, Bangalore, Dr Parul Mrigpuri & Dr Sonam Spalgais delivered talks during the program. The meeting was attending by the distinguish faculty & Students of the reputed organizations across the country virtually.



APAAACI ALLERGY WEEK (Day – 13)

Institute Staff organized Community Programme in the residential area of Dhaka, Delhi. Soaps, Pamphlets etc.were distributed among the residents



Activity Community Programme: Day – 14

Home Based Pulmonary Rehabilitation for Post Covid Patients

Vallabhbhai Patel Chest Institute started Home Based Pulmonary Rehabilitation for the Management of Post Covid Patients. This is one of the first programme of its kind to be started by the institution to provide treatment for Post Covid patients. The three months programme was started on June 25, 2021. During the programme patients were taught breathing, retraining, bronchial hygiene and different modalities of exercises and nutritional advice & psychological support was given as per standard guidelines. Patients could avial these services by making a telephone call on 011 27402479/8800845320 from 11 AM to 1 PM, Monday to Friday.



NTQLS Staff Felicitation (August 2, 2021)

National Tobacco Quit Line Services (NTQLS) awarded best three counselors (Mr Nameet Kumar, Ms Sakshi Singh & Mr Rahul Kumar Chaudhary) for their outstanding performance, hard Work & dedication at workplace for the Month of June 2021. The awards were distributed by Prof. Raj Kumar, Director, VPCI, Delhi.



NTQLS Staff Felicitation for the month of June 2021

Independence Day Celebration (August 15, 2021)

Vallabhbhai Patel Chest Institute celebrated the 75th Independence Day on August 15, 2021 at VPCI premises. Prof. Raj Kumar, Director of the institute hoisted the flag. VPCI staff and students were present at the occasion. Program ended with distribution of sweets among the people present.



75th Independence Day Celebration at VPCI

NTQLS Staff Felicitation (September 1, 2021)

National Tobacco Quit Line Services awarded best three counselors (Mr. Nameet Kumar, Mr. Bhairav Dutt Sharma & Mr. Zuhaib Zafar) for their outstanding performance, hard Work & dedication at workplace for the Month of July 2021. The awards were distributed by Prof. Raj Kumar, Director, VP Chest Institute, Delhi.



NTQLS Staff Felicitation for the month of July, 2021

Felicitation of Housekeeping staff & Ward Boys for rendering their meritorious services during Covid -19 Pandemic (September 2, 2021)

Vallabhbhai Patel Chest Institute felicitated all Housekeeping staff and Ward Boys of the Institute for rendering their meritorious service during the COVID – 19 pandemic . The programme was organized on September 2, 2021 at 3:00 PM in the Lecture Hall – 2, Main Building of the Institute where mementoes & certificates of appreciation were distributed.



Felicitation of Housekeeping staff & Ward Boys

Meeting of Director, VPCI with staff involved in Sample Collection and RTPCR Test related to COVID-19 Pandemic (September 10, 2021)

Dr. Raj Kumar, Director, VPCI conducted a meeting with staff involved in conducting sample collection and RTPCR test related to COVID – 19 pandemic on September 10, 2021 at 11:00 AM in the Seminar Hall, Paintal Memorial Golden Jubilee Auditorium of the Institute.



Meeting with staff involved in Sample Collection and COVID RTPCR Test

Inauguration of National Reference Laboratory of Antimicrobial Resistance in Fungal Pathogen (September 13, 2021)

National Reference Laboratory of Antimicrobial Resistance in Fungal Pathogen was inaugurated by Prof. V S Chauhan, Chairman, Governing Body, VPCI on September 13, 2021 at 03:00 PM. The inauguration was held in the Medical Mycology unit. All faculty, Students and Research Scholars attended the programme.



Inauguration of National Reference Laboratory of Antimicrobial Resistance in Fungal Pathogen

Prize Distribution Ceremony of Painting Competition & online Essay Competition (September 15, 2021)

VPCI organized a Prize Distribution Ceremony on September 15, 2021 at 03:00 PM in the Seminar Hall of Paintal Memorial Golden Jubilee Auditorium of the institute to felicitate winners of Painting Competition & Online Essay Competition (Hindi/English) for Children of VPCI Staff during observance of Swachhta Pakhwada 2021 from April 1-15, 2021.



Prize Distribution Ceremony of Painting Competition & online Essay Competition

CME on Pharmacovigilance a step towards patients' safety (September 21, 2021)

The AMC (Adverse Drug Reaction Monitoring Centre) of the Institute organized a CME on Pharmacovigilance - a step towards patients' safety on September 21, 2021 at 03:00 PM at Paintal Memorial Golden Jubilee Auditorium of the Institute during observance of National Pharmacovigilance week under the aegis of Indian Pharmacopodia Commission, NCC, Pharmacovigilance Programme of India, Ministry of Health & Family Welfare, Govt. of India from September 17-23, 2021. All Faculty, Staff & Students of VPCI attended the programme.



CME on Pharmacovigilance a step towards patients’ safety

NTQLS Staff Felicitation (October, 2021)

National Tobacco Quit Line Services awarded best three counselors (Mr. Nameet Kumar, Ms. Sayara & Ms. Pooja) for their outstanding performance, hard Work & dedication at the workplace for the Month of September 2021. The awards were distributed by Prof. VS Chauhan, Chairman, Governing Body, VPCI & Prof. Raj Kumar, Director, VPCI, Delhi.



NTQLS Staff Felicitation for the month of September, 2021

Vigilance Awareness Week – 2021 (October 26 to November 1, 2021)

The institute observed Vigilance Awareness Week – 2021 from October 26 to November 1, 2021, on the theme ‘Independent India @75: Self Reliance with Integrity’. As a part of the program, pledge was read out by all the faculty, staff and students of the Institute on October 26, 2021.



Pledge taking during Vigilance Awareness Week – 2021

Felicitation Ceremony of Prof. Digambar Behera for receiving Padma Shri award (November 9, 2021).



Felicitation Ceremony of Padma Shri awardee Prof. Digambar Behera

Celebration of Constitution Day (November 26, 2021)

As per GOI notification to commemorate the day of adoption of our Constitution, the occasion of Samvidhan Diwas (Constitution Day) was organized with 'Jan Bhagidari' on a Virtual Mode at auditorium, VPCI. Hon'ble President of India was leading the celebration of Constitution Day which was telecasted live from Central Hall of Parliament on November 26, 2021 from 11:00 am onwards. During the program, the preamble to the Constitution was read out by the Hon'ble President of India.



Celebration of Constitution Day at VPCI

Inauguration of Allergy Testing Centre (January 6, 2022)

Allergy Testing Centre was inaugurated by Prof. VS Chauhan, Chairman, Governing Body, VPCI with Prof. Raj Kumar Director, VPCI at Vishwanathan Chest Hospital (CRC). All Faculty, Students & Nursing Staff of VPCI attended the event.



Inauguration of Allergy Testing Centre at VCH, VPCI

Certificate Course on Diagnosis of Respiratory Allergy and Immunotherapy (March 11-13, 2022)

“Certificate Course on Diagnosis of Respiratory Allergy and Immunotherapy” was organized by the National Centre of Respiratory Allergy, Asthma & Immunology, supported by Society for Tobacco Control during March 11-13, 2022 at Paintal Memorial Golden Jubilee Auditorium, VPCI, Delhi. Prof. Raj Kumar was the Chairman of the organizing committee. All Faculty, Staff & Students of VPCI attended the programme.



Certificate Course on Diagnosis of Respiratory Allergy and Immunotherapy

List of Publications

Journals

1. Ali NH, Rehman S, Naqvi M, Gulati Kavita, Ray A. Periostin: A potential Biomarker and Therapeutic Target in Pulmonary Diseases. *J Pharm Pharm Sci* 2022;25:137-48.
2. Anshu Priya, Sonam S, Kulshrestha R. Primary Pulmonary LELC: A Rare Childhood Malignancy. *Med J. Armed Forces India*. <https://doi.org/10.1016/j.mjafi.2021.08.006>.
3. Arora P, Singh P, Wang Y, Yadav A, Pawar K, Singh A, Padmavati G, Xu J, Chowdhary A. Environmental isolation of *Candida auris* from the coastal wetlands of Andaman Islands, India. *mBio* 2021;12:e03181-20.
4. Ashwani Verma, Nachiket Gudi, Uday N Yadav, Manas Pratim Roy, Amreen Mahmood, Ravishankar N, Pradeepa Nayak. Prevalence of COPD among population above 30 years in India: A systematic review and meta-analysis. *J Glob Health* 2021;11:04038.
5. Bhadra J, Seth S, Kulshrestha M, Dhupper V, Aggarwal H, Sen J. Testosterone and estradiol in men with acute ischemic stroke: A North Indian case control. *Curr J Neurol* 2021;20(4):202-7.
6. Bidaud AL, Schwarz P, Chowdhary A, Dannaoui E. In vitro antifungal combination of terbinafine with itraconazole against Isolates of *Trichophyton* Species. *Antimicrob Agents Chemother* 2022;66:e0144921.
7. Choudhari OK, Spalgais S, Ojha UC, Pal RS and Rani A. A Case of Unilateral Vocal Cord Palsy due to Bakelite Exposure. *Indian J Chest Dis Allied Sci* 2021;63:33-36.
8. De Carolis E, Marchionni F, La Rosa M, Meis JF, Chowdhary A, Posteraro B, Sanguinetti M. Are we ready for nosocomial *Candida auris* infections? Rapid identification and antifungal resistance detection using MALDI-TOF Mass Spectrometry may be the answer. *Front Cell Infect Microbiol* 2021;11:645049.
9. de Groot T, Janssen T, Faro D, Cremers NAJ, Chowdhary A, Meis JF. Antifungal activity of a medical-grade honey formulation against *Candida auris*. *J Fungi (Basel)* 2021;7:50.
10. Dubey H, Dubey A, Gulati Kavita, Ray A. Protective effects of L-arginine on cognitive deficits and biochemical parameters in an experimental model of type-2 diabetes mellitus induced Alzheimer's disease in rats. *J Physiol Pharmacol* 2022;73:1-15.
11. Ekadashi Rajni, Ashutosh Singh, Bansidhar Tarai, Kusum Jain, Ravishankar N, Kalpana Pawar, Vedprakash Mamoria, Anuradha Chowdhary. A High Frequency of *Candida auris* Blood Stream Infections in Coronavirus Disease 2019 Patients Admitted to Intensive Care Units, Northwestern India: A Case Control Study. *Open Forum Infect Dis* 2021;1-12.
12. Fiona V Dsouza, Sampath Kumar A, Stephen RS, Harish Raghavan, Ravishankar N. Effectiveness of Inspiratory Muscle Training on Respiratory Muscle Strength in Patients Undergoing Cardiac Surgeries: A Systematic Review with Meta-Analysis. *Ann Rehabil Med* 2021;45(4):264-73.
13. Goel N, Goyal N, Kumar R. Clinico-radiological evaluation of post COVID-19 at a tertiary pulmonary care centre in Delhi, India. *Monaldi Arch Chest Dis* 2021;91(3):1682.
14. Goel N, Goyal N, Kumar R. Insights in the Management of Long COVID-19: Preliminary Observations. *Indian J Chest Dis Allied Sci* 2021;63(2):65-73.
15. Goel N, Goyal N, Kumar R. Long COVID Mimicking Interstitial Lung Disease: A Case Series. *Curr Health Sci J* 2021;47(3):469-73.

16. Goel N, Goyal N, Spalgais S, Mrigpuri P, Menon B, Kumar R. Protracted non-invasive ventilation for severe hypoxemic respiratory failure in Long COVID: a case series. *Crit Care Innov* 2021;4(3):20–6.
17. Goel N, Kumar R. Allergy testing amidst COVID pandemic. *Indian J Allergy Asthma Immunol* 2021;35:1-2.
18. Goel Nitin, Nitesh Goyal, Ravishankar N, Raj Kumar. Systemic Corticosteroids for Management of 'long-COVID': An Evaluation After 3 Months of Treatment. *Monaldi Arch Chest Dis* 2021;92(2):1981.
19. Gulati Kavita Sharma N, Kumar R, Prakash J, Ray A. Role of Pharmacovigilance in Drug Safety: An Overview of Activities at an Adverse Drug Reaction Monitoring Centre (AMC) of Delhi. *EC pharmacol toxicol* 2022;10(2):28-41.
20. Jenull S, Shivarathri R, Tsymala I, Penninger P, Trinh PC, Nogueira F, Chauhan M, Singh A, Petryshyn A, Stoiber A, Chowdhary A, Chauhan N, Kuchler K. Transcriptomics and phenotyping define genetic signatures associated with echinocandin resistance in *Candida auris*. *mBio* 2022:e0079922.
21. Jofre GI, Singh A, Mavengere H, Sundar G, D'Agostino E, Chowdhary A, Matute DR. An Indian lineage of *Histoplasma* with strong signatures of differentiation and selection. *Fungal Genet Biol* 2022;158:103654.
22. Joshi J, Kotwani A. learnings from select Indian public welfare programs to catalyze the implementation of India's national action plan on antimicrobial resistance. *Int J Community Med Public Health* 2021;8(8):4041-45.
23. Kalyana Chakravarthy, Anulucia Augustine, Gopala Krishna Alaparathi, Fatma Hegazy, Tamer Mohamed Shousha, Sara Atef Ali, Ravishankar N, Baskaran Chandrasekaran. Maximal Respiratory Pressures and Maximum Voluntary Ventilation in Young Arabs: Association with Anthropometrics and Physical Activity. *J Multidiscip Healthc* 2021;14:2923-30.
24. Kamble U, Dheeresh KH, Bhosale K, Indu MB, Sharma B, Chowdhary A. Evaluation of point of care serum cryptococcal antigen by lateral flow immunoassay for diagnosis of cryptococcosis and cryptococcal meningitis in HIV-positive patients. *Indian J Sex Transm Dis AIDS* 2021;42:14-8.
25. Kamgo T, Spalgais S and Kumar R. Prevalence and profile of Obstruction Sleep Apnea in patients with Interstitial Lung Diseases of North India. *JAPI* 2022;70:20-24.
26. Kamgo T, Spalgais S, Kumar R. Prevalence and Profile of Obstructive Sleep Apnea in Patients with Interstitial Lung Diseases of North India. *J Assoc Physicians India* 2022;70(5):11-12.
27. Karanth S, Acharya C, Holla A, Ravishankar N, Nagri S.K. Association of laboratory biomarkers – serum albumin, C-reactive protein, lactate dehydrogenase and D-dimer with severity of COVID-19 infections. *New Armen Med J* 2021;15(3):29-38.
28. Khanna M, Agrawal N, Chandra R, Dhawan G. Targeting unfolded protein response: a new horizon for disease control. *Expert Rev Med* 2021;23:1-12.
29. Khurana A, Agarwal A, Agrawal D, Sardana K, Singh A, Chowdhary A. Multidrug resistant tinea corporis/cruris: Response to voriconazole. *J Mycol Med* 2022;32(4):101306.
30. Khurana A, Agarwal A, Singh A, Sardana K, Ghadlinge M, Agrawal D, Panesar S, Sethia K, Chowdhary A. Predicting a therapeutic cut-off serum level of itraconazole in recalcitrant tinea corporis and cruris-A prospective trial. *Mycoses* 2021;64:1480-88.
31. Kong X, Tang C, Singh A, Ahmed SA, Al-Hatmi AMS, Chowdhary A, Nenoff P, Gräser Y, Hainsworth S, Zhan P, Meis JF, Verweij PE, Liu W, de Hoog GS. Antifungal susceptibility and mutations in the squalene epoxidase gene in dermatophytes of the *Trichophyton mentagrophytes* species complex. *Antimicrob Agents Chemother* 2021;65:e0005621.10.

32. Kotwani A, Bhanot A, Singal GL, Gandra S. Marketing and Distribution System Foster Misuse of Antibiotics in the Community: Insights from Drugs Wholesalers in India. *Antibiotics* 2022;11:95.
33. Kotwani A, Joshi J, Lamkang AS. Over-the-counter sale of antibiotics in India: a qualitative study of providers' perspective across two states. *Antibiotics* 2021;10:1123.
34. Kotwani A, Kapur A, Singhal S, Wattal C. Is the education of human and animal healthcare professionals about antimicrobial resistance and stewardship adequate during their pre-service training? *Indian J Med Microbiol* 2021; 39: 439-445.
35. Krishnamurthy P, Sharma B, Deepak D, Shukla S, Arya V, Chowdhary A. Disseminated Histoplasmosis Post-IL6 Inhibitor Use in A COVID-19 Patient. *Journal of Microbiology and Infectious Diseases* 2021;11:170-73.
36. Kulshrestha R, Amit Singh, Pawan Kumar, Divya S. Nair, Jyoti Batra, A.K.Mishra, A.K. Dinda. Nanoapproach targeting TGF β 1-Smad pathway and modulating lung microenvironment. *Process Biochem* 2022;121:126-41.
37. Kulshrestha R, Pawan Kumar, Amit Singh, Nupur K, Sonam Spalgias, Parul Mrigpuri, Rajkumar. Untangling the KRAS mutated lung cancer subsets and its therapeutic implications. *Mol Biol* 2021;2:40.
38. Kulshrestha Ritu, Singh Amit, Kumar Pawan, Mishra AK, Dinda AK. Surface modifications of biodegradable polymeric nanoparticles and their characterization by advanced electron microscopy techniques, Special issue on Electron Microscopy in Biomedical Sciences. *Indian J Biochem Biophys* 2021;58:321-33.
39. Kumar A, Kaushik P, Incerpi S, Pedersen JZ, Goel S, Prasad AK, Rohil V, Parmar VS, Saso L, Len C. Evaluation of the Free Radical Scavenging Activities of Ellagic Acid and Ellagic Acid Peracetate by EPR Spectrometry. *Molecules* 2021;26(16):4800.
40. Kumar A, Nandakumar A, Nair S, Singh A, Shashindran N, Thulasidharan S, Subhash K, Ramachandran A, Chowdhary A. *Exophiala dermatitidis* as a cause of central line associated bloodstream infection in an infant: Case report and literature review. *Rev Iberoam Micol* 2021;38:12-5.
41. Kumar A, Udayakumaran S, Sachu A, Shashindran N, Baby P, Thaha A, Kurien A, Chowdhary A. Ventriculoperitoneal shunt infection by *Cryptococcus neoformans* sensu stricto: Case report and literature review. *Rev Iberoam Micol* 2022;39:16-20.
42. Kumar C, Shrivastava K, Singh A, Chauhan V, Varma-Basil M. Skin and soft-tissue infections due to rapidly growing mycobacteria: An overview. *Int J Mycobacteriol* 2021 ;10(3):293-300.
43. Kumar Manoj, Rajesh Kumar Gupta, Raj Kumar, Sonam Spalgais, Kamal Singh. Cockroach Exposure and Its Allergy Sensitization in Asthma Patients. *Monaldi Arch Chest Dis* 2021;91(3):1685.
44. Kumar R, Behera D, Jindal SK, Menon B, Goel N, Spalgais S, Mrigpuri P, Bansal V, Ghoshal AG, Alok N, Anant M. Post-COVID-19 respiratory management: expert panel report. *Indian J Chest Dis Allied Sci* 2020:179-91.
45. Kumar R, Behera D, Singh AB, Gaur SN, Aggarwal MK, Prasad R, Menon B, Goel N, Mrigpuri P, Spalgais S, et al. Indian Guidelines for Diagnosis of Respiratory Allergy. *Indian J Chest Dis Allied Sci* 2021; 63(4):225-348.
46. Kumar R, Denning DW, Chowdhary A. Chronic respiratory diseases burden and healthcare facilities. *Indian J Chest Dis Allied Sci* 2022;64:61-2.
47. Kumar R, Kumar D, Kumar M, Mavi AK, Singh K. Impact of pollen counts and Air pollution Over Hospital Visits for Respiratory Illnesses in North Delhi Region. *Indian J Chest Dis Allied Sci* 2022;64:15-20.
48. Kumar R, Yadav SR. Continuous Positive Airway Pressure Compliance: Addressing the Elephant in the Room. *Indian J Sleep Med* 2021;16(4):95-96.

49. Lakhatakia, L., Spalagais, S., & Kumar, R. Spectrum of pulmonary aspergillus diseases in post TB lung diseases. *Indian J Tuberc* 2021. <https://doi.org/10.1016/j.ijtb.2021.07.016>.
50. Laxmi V, Gupta R, Gulati Kavita, Ray A. Anti- Allergic Effect of Sildenafil and Tadalafil in Ovalbumin Induced Bronchial Asthma in Rats. *Int J Plant Anim Environ Sci* 2021;11(2): 1-10.
51. Mavi AK, Spalagais S, Singh K, K Manoj, Kumar R. Relevance of skin-prick test and immunoglobulin E estimation in pigeon-exposure asthma patients. *Egypt J Chest Dis Tuberc* 2021;70:433-40.
52. Mavi AK, Spalgais S, Kumar M, Singh K, Priya, Kumar R. Qualitative analysis of protein antigen in bird exposed asthma patients by high-performance liquid chromatography method. *Indian J Allergy Asthma Immunol* 2021;35:55-60.
53. Mavi AK, Spalgais S, Singh K, Kumar U and Kumar R. Expression profile of MUC1 protein in Pigeon allergens positive asthmatic. *Immunobiology* 2021;226:52086.
54. Mrigpuri P, Gupta VB, Menon B, Spalgais S, Kumar R. Isolated Pulmonary Cysticercosis Presenting as Mass Lesion. *Turk Thorac J* 2021;22(5):418-21.
55. Mrigpuri P, Menon B, Spalgais S, Kulshrestha R, Saini H, Gupta A. Immunoglobulin G4-related disease presenting with pulmonary manifestations, lymphadenopathy, and vocal cord immobility: an unusual presentation of a rare disease. *Egypt J Chest Dis Tuberc* 2022;71(1):135.
56. Mrigpuri P, Sonal S, Spalgais S, Goel N, Menon B, Kumar R. Uncontrolled diabetes mellitus: A risk factor for post COVID fibrosis. *Monaldi Arch Chest Dis* 2021;91(1):1607.
57. Mrigpuri P, Spalgais S, Goel N, Mehta RK, Sonal S, Kumar R. A low-cost pulmonary function test laboratory setup for infection control during COVID-19. *Lung India* 2022;39(1):93-94.
58. Naqvi M, Gulati Kavita, Ali NH, Ray A. A Comparative Evaluation of UNIM-352, a Unani Polyherbal Preparation, and its Optimized Formulations, on Oxidative Stress and Bronchial Hyperresponsiveness in Experimental Model of Bronchial Asthma. *EC pharmacol toxicol* 2022;10(4):58-70.
59. Ojha U.C, Spalgais S, Ranjan A and Choudhari O.K. Respiratory health evaluation of construction workers using questionnaire. *RUDN J Med* 2021;25(4):313–20.
60. Ojha UC, Kumar A, Spalgais S, Choudhari OK and Anbhule A. Lung Diseases in Plastic Fumes Exposed Workers: A Case Series. *Indian J Chest Dis Allied Sci* 2021;63:193-97.
61. Pandey A, Kulshrestha R, Bansal SK. Dynamic role of LMW-hyaluronan fragments and Toll like receptors 2,4 in progression of bleomycin induced lung parenchymal injury to fibrosis. *Egypt J Bronchol* 2021;15:27.
62. Prina Vira, Stephen R Samuel, Santosh Rai PV, PU Prakash Saxena, Sampath Kumar Amaravadi, Ravishankar N, Diwakar D Balachandran. Feasibility and Efficacy of Inspiratory Muscle Training in Patients with Head and Neck Cancer Receiving Concurrent Chemoradiotherapy. *Asian Pac J Cancer Prev* 2021;22(12):3817-22.
63. Priya A, Goel N, Kumar R, Kamal Singh. The association between asthma and obstructive sleep apnea. *Indian J Chest Dis Allied Sci* 2021;63(2):95-9.
64. Rachita Gururaj, Stephen Rajan Samuel, K. Vijaya Kumar, Anupama Hegde, PU Prakash Saxena, Ravishankar N, Oxana Palesh. Relationship between physical activity, objective sleep parameters, and circadian rhythm in patients with head and neck cancer receiving chemoradiotherapy: A longitudinal study. *Laryngoscope Investig Otolaryngol* 2021;1–6.
65. Ranga V, Gupta A, Mrigpuri P, Spalgais S. Organizing pneumonia as preliminary presentation of rheumatoid arthritis: A case report and review of literature. *J Assoc Chest Physicians* 2021;9(1):45.

66. Rehman S, Ray A, Gulati Kavita, Naqvi M. The Neurobiology of Post-Traumatic Stress Disorder (PTSD): Perspectives and Trends. *EC pharmacol toxicol* 2021;9(8): 22-36.
67. Reshi MR, Gulati Kavita, Akhtar J, Khan AA, Ray A. Dawa-ul-Kurkum as a hepatoprotective, a Unani polyherbal preparation, in D-Galactosamine Induced liver Cirrhosis in rats and its possible mechanisms. *EC pharmacol toxicol* 2021; 9(12):03-13.
68. Reshi MR, Gulati Kavita, Khan AA, Ray A. Hepatoprotective effects of Dawa-Ul-Kurkum, a Unani polyherbal preparation and the possible mechanisms in experimental model of paracetamol induced liver damage in rats. *EC pharmacol toxicol* 2021;9(7): 03-16.
69. Reshi MR, Gulati Kavita, Ray A. Immunoglobulin: Specific Marker for Hepatic Diseases. *EC pharmacol toxicol* 2022;10(4):149-57.
70. Sabeena S, Ravishankar N, Veena Kamath, Parvati V Bhat, Puneet Bhatt, Arun Kumar G. Prevalence of Human Papillomavirus (HPV) DNA among Men with Oropharyngeal and Anogenital Cancers: A Systematic Review and Meta-Analysis. *Asian Pac J Cancer Prev* 2021;22(5):1351-64.
71. Sabeena S, Ravishankar N. Postvaccination prevalence of vaccine-Human Papillomavirus (vHPV) genotypes among the target population: A systematic review and meta-analysis. *J Med Virol* 2021;93:4659-67.
72. Sabeena S. Ravishankar N. Role of microRNAs in Predicting the Prognosis of Cervical Cancer Cases: A Systematic Review and Meta-Analysis. *Asian Pac J Cancer Prev* 2021;22(4):999-1006.
73. Saini H, Mrigpuri P, Menon B, Sonal S. Role of IP-10 during follow up of pulmonary tuberculosis patients. *Monaldi Arch Chest Dis* 2022;92(4);2022.
74. Shivani Mandrekar, Prem Venkatesan, Ravishankar N. Prevalence of musculoskeletal chest pain in the emergency department: a systematic review and meta-analysis. *Scand J Pain* 2021;21(3):434-444.
75. Shivarathri R, Jenull S, Chauhan M, Singh A, Mazumdar R, Chowdhary A, Kuchler K, Chauhan N. Comparative transcriptomics reveal possible mechanisms of amphotericin B resistance in *Candida auris*. *Antimicrob Agents Chemother* 2022;e0227621.
76. Shraddha Gupta, Chanchal Kumar, Kamal Shrivastava, Varsha Chauhan, Anupriya Singh, Rohan Arora, Astha Giri, Andrea Maurizio Cabibbe, Naresh Kumar Sharma, Andrea Spitaleri, Daniela Maria Cirillo, Mridula Bose, Mandira Varma-Basil. Whole genome sequencing of isoniazid mono-resistant clinical isolates of *Mycobacterium tuberculosis* reveals novel genetic polymorphisms. *Tuberculosis (Edinb)* 2022;133:102173.
77. Singh A, Singh P, Dingemans G, Meis JF, Chowdhary A. Evaluation of DermaGenius® resistance real-time polymerase chain reaction for rapid detection of terbinafine-resistant *Trichophyton* species. *Mycoses* 2021;64:721-26.
78. Singh A, Singh P, Meis JF, Chowdhary A. In vitro activity of the novel antifungal olorofim against dermatophytes and opportunistic moulds including *Penicillium* and *Talaromyces* species. *J Antimicrobial Chemother* 2021;76:1229-33.
79. Sonam S, Mrigpuri P, Kulshrestha R, Gupta V, Kumar R. Pneumonic type adenocarcinoma: Empirical ATT delaying diagnosis for 1.5 year. *Med J. Armed Forces India* 2022;71(3):405-8.
80. Spalgais S, Thinles T, Mrigpuri P, Kumar R. Pulmonary sarcoidosis presenting as hoarseness and mass lesion. *Monaldi Arch Chest Dis* 2021;25;91(1):1595.
81. Srivastava AK, Rohil V, Bhushan B, Eslavath MR, Gupta H, Chanda S, Kumar B, Varshney R, Ganju L. Probiotics maintain the gut microbiome homeostasis during Indian Antarctic expedition by ship. *Sci Rep* 2021;11(1):18793.

82. Sulis G, Batomen B, Kotwani A, Pai M, Gandra S. Sales of antibiotics and hydroxychloroquine in India during the COVID-19 epidemic: An interrupted time series analysis. *PLoS Med* 2021;18(7): e1003682.
83. Sulis G, Pradhan R, Kotwani A, Gandra S. India's ban on antimicrobial fixed dose combinations: winning the battle, losing the war? *J Pharm Policy Pract* 2022;15:33.
84. Tang C, Kong X, Ahmed SA, Thakur R, Chowdhary A, Nenoff P, Uhrlass S, Verma SB, Meis JF, Kandemir H, Kang Y, de Hoog GS. Taxonomy of the *Trichophyton mentagrophytes/T. interdigitale* species complex harboring the highly virulent, multiresistant genotype *T. indotineae*. *Mycopathologia* 2021;186:315-26.
85. Tanwar A, Gulati Kavita, Ray A. Modulation of Metabolic and Cognitive Parameters by *Withania somnifera* Root Extract in High-Fat Diet and Streptozotocin (HFD-STZ) Induced Type 2 Diabetic Rats. *EC Psychol Psychiatry* 2022;11(3):46-58.
86. Tyagi A, Tyagi U, Vidhani B. Contextual Challenges' Parturition across Meandering Pathway under New Education Policy 2020. *Hans Shodh Sudha* 2022;2(3):26-30.
87. van Haren MHI, de Groot T, Spruijtenburg B, Jain K, Chowdhary A, Meis JF. Development of a multiplex PCR short tandem repeat typing scheme for *Candida krusei*. *J Clin Microbiol* 2022;60:e0203221.
88. Vennilavan RN, Spalgais S, Kumar R. Asthma phenotype: Clinical, physiological, and biochemical profiles of North Indian patients. *Lung India* 2022;39(2):121-28.
89. Verma P, Gulati Kavita, Ray A. Evaluation of cellular and molecular mechanism of anti-asthmatic effects of a traditional herbal drug in rats. *Asian J Pharmaceutical Res Develop* 2021;9(5):29-34.
90. Verma P, Gulati Kavita, Ray A. Evaluation of Cellular and Molecular Mechanisms of therapeutic effects of *Hibiscus rosa-sinensis* and *Piper nigrum* in Experimental Model of Bronchial Asthma. *Medicon Pharmaceutical Sciences* 2022;2(2):02-13.
91. Viridi JK, Kulshrestha R, Jaggi AS. Ameliorative Effects of 3-methyladenine and Chloroquine in 3-nitropropionic-induced Huntington's Disease like Symptoms in Mice. *Indian J of Pharmaceutical Education and Research* 2021;55(4):1037-47.
92. Yadav A, Jain K, Wang Y, Pawar K, Kaur H, Sharma KK, Tripathy V, Singh A, Xu J, Chowdhary A. *Candida auris* on apples: Diversity and clinical significance. *mBio* 2022; e0051822.
93. Yadav R, Nagori A, Mukherjee A, Singh V, Lodha R, Kabra SK, Yadav G, Saini JK, Singhal KK, Jat KR, Madan K, George MP, Mani K, Mrigpuri P, Kumar R, Guleria R, Pandey RM, Sarin R, Dhaliwal RS. Effects of ambient air pollution on emergency room visits of children for acute respiratory symptoms in Delhi, India. *Environ Sci Pollut Res Int* 2021;28(33):45853-66.
94. Yadav SR, Kumar R, Ish P, Gupta N. Smoking cessation in COVID-19: A silver lining to the cloud. *J Mental Health Hum Behav* 2021;26:85-87.

Books

1. Kumar R, Kumar M. Training Manual. In: Raj Kumar, editor *Training Manual of Certificate Course on Diagnosis of Respiratory Allergy and Immunotherapy*. Delhi: Vallabhbhai Patel Chest Institute, 2021.

Chapters in Books

1. Goel N, Verma AK. Rhinitis Phenotypes. In: Certificate Course on Diagnosis of *Respiratory Allergy and Immunotherapy*. National Centre of Respiratory Allergy Asthma and Immunology. Delhi: Vallabhbhai Patel Chest Institute, 2022: pp40-50.

2. Kotwani A. Overuse of Antibiotics in Pregnancy: Beyond Antimicrobial Resistance. In: Mehta S, Grover A, editors *Infections and Pregnancy*. Springer, Singapore,2022;pp 641–650.
3. Ravishankar N. Introduction to sampling methods – probability and nonprobability sampling methods. In: Raj Kumar, editor *Workshop Manual of National Workshop on Biomedical Research Methods*. Delhi: Vallabhbhai Patel Chest Institute, 2021: pp8-14.
4. Ravishankar N. Measures of diagnostic accuracy – sensitivity, specificity, positive predictive value, negative predictive value, Receiver Operating Characteristic (ROC) curve. In: Raj Kumar, editor *Workshop Manual of National Workshop on Biomedical Research Methods*. Delhi: Vallabhbhai Patel Chest Institute, 2021:41-45.
5. Ravishankar N. Types of variables and scales of measurement. In: Raj Kumar, editor *Workshop Manual of National Workshop on Biomedical Research Methods*. Delhi: Vallabhbhai Patel Chest Institute, 2021: pp1-4.
6. Shariff M, Aditi. Microbiome Therapeutics in Respiratory Illnesses. In: Glibetic M, editor *Comprehensive Gut Microbiota*. Elsevier,2022;vol3: pp. 331–41.
7. Spalgias S. Anaphylaxis in allergy course. In: *45th Workshop on Respiratory Allergy: Diagnosis and Management*. Delhi: Vallabhbhai Patel Chest Institute, 2021.
8. Spalgias S. FENO. In: *45th Workshop on Respiratory Allergy: Diagnosis and Management*. Delhi: Vallabhbhai Patel Chest Institute, 2021.
9. Spalgias S. NIV in chronic stable Lung Diseases. In: *Training Course Pulmonary Rehabilitation*. Delhi: Vallabhbhai Patel Chest Institute, 2021.

Media Recognition

NEWS PAPER CUTTING



Navvharat Times (30.01.2022)

दिल्ली पटेल इंस्टीट्यूट के साथ देवघर एम्स का हुआ करार

देवघर एम्स में छाती, श्वास रोग व एलर्जी पर होगा रिसर्च

संवाददाता > देवघर

दिल्ली के वल्लभ भाई पटेल चैस्ट इंस्टीट्यूट का देवघर एम्स के साथ एमओयू हुआ है. देवघर एम्स में छाती, श्वास रोग, एलर्जी आदि पर रिसर्च किया जायेगा. पटेल चैस्ट इंस्टीट्यूट के फैकल्टीज देवघर एम्स के छात्रों को ट्रेनिंग भी देंगे. साथ ही छाती रोग से पीड़ित मरीजों का बेहतर इलाज हो सकेगा. देवघर एम्स के निदेशक डॉ सौरभ याण्येय व पटेल चैस्ट इंस्टीट्यूट के निदेशक डॉ राजकुमार ने एमओयू पर हस्ताक्षर किये हैं. डॉ सौरभ ने बताया कि डॉ राजकुमार आरके मिशन देवघर के छात्र रह चुके हैं. इस एमओयू से छाती रोग की दवा की बुनियादी पहलुओं पर रिसर्च व पल्मोनरी मेडिसिन पर बेहतर काम किया जायेगा. देवघर

पीड़ित मरीजों का हो सकेगा बेहतर इलाज



- छाती रोग की दवा की बुनियादी पहलुओं पर रिसर्च व पल्मोनरी मेडिसिन पर बेहतर काम किया जायेगा

पटेल चैस्ट इंस्टीट्यूट के डॉक्टरों की टीम जल्द आयेगी देवघर

पटेल चैस्ट इंस्टीट्यूट के डॉक्टरों की टीम जल्द ही देवघर एम्स का विजिट करने आयेगी. देवघर एम्स के निदेशक डॉ सौरभ ने बताया कि पटेल चैस्ट इंस्टीट्यूट छाती रोग से पीड़ित लोगों का इलाज करता है. इस संस्थान ने पूरे विश्व में चैस्ट मेडिसिन के क्षेत्र में एक विशिष्ट स्थान अर्जित किया है.

एम्स के छात्र इस कोविड में छाती से संबंधित नुकसान पर विशेष शोध करेंगे. इससे देवघर एम्स के छात्रों

को नयी ट्रेनिंग के साथ-साथ संताल परगना के छाती रोग से पीड़ित रोगियों का इलाज भी सुलभ हो सकेगा.

NBT

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सवाल सांस का



AQI से समझे हवा की हेसियत

रंग	वर्ण	वर्णन	आयु समूह के लिए	आयु समूह के लिए
हर	1	सबसे बेहतर	सबसे बेहतर	सबसे बेहतर
हर-हर	2	सबसे बेहतर	सबसे बेहतर	सबसे बेहतर
हर-हर-हर	3	सबसे बेहतर	सबसे बेहतर	सबसे बेहतर
हर-हर-हर-हर	4	सबसे बेहतर	सबसे बेहतर	सबसे बेहतर
हर-हर-हर-हर-हर	5	सबसे बेहतर	सबसे बेहतर	सबसे बेहतर

यहां है पलूशन का कारगर सलूशन

हर दिन शरीर को डिटॉक्सिफाई करना बहुत जरूरी

दिन से रात तक करें डिटॉक्सिफाई

हवा में मौजूद धूल कणों को शरीर के अंदर ले जाने से बचाने के लिए शरीर को डिटॉक्सिफाई करना जरूरी है। यह प्रक्रिया शरीर को स्वस्थ रखने में मदद करती है।

जांचें दम और करें एक्सरसाइज

दम और एक्सरसाइज को नियंत्रित रखना स्वास्थ्य के लिए जरूरी है।

NBT
नवभारत टाइम्स

दिल्ली यूनिवर्सिटी ने मनाया डॉक्टर्स डे, सम्मानित हुए डॉक्टर्स



■ विस, नई दिल्ली : दिल्ली यूनिवर्सिटी में गुरुवार को नैशनल डॉक्टर्स डे मनाया गया। इस मौके पर डीयू प्रशासन ने यूनिवर्सिटी के कई डॉक्टर्स को सम्मानित किया और सभी डॉक्टर्स का उनकी कड़ी मेहनत के शुक्रिया अदा किया।

वाइसरीगल लॉज के कारुसिल हॉल में हुए इस समारोह में कोविड-19 की मुश्किल घड़ी में फ्रंटलाइन वॉरियर्स बनकर खड़े हुए यूनिवर्सिटी और डीयू के कॉलेजों के 14 डॉक्टर्स को सम्मानित किया गया। इनमें डब्ल्यूएस हेल्थ सेंटर - नॉर्थ कैम्पस की डॉ. शीला जायसवाल, डब्ल्यूएस हेल्थ सेंटर-साउथ कैम्पस के डॉ. रिकू माथुर, जीटीबी हॉस्पिटल के डॉ. अमित कुमार वर्मा, यूसीएमएस के प्रो अशोक कुमार सक्सेना, जीबी पंत हॉस्पिटल के डॉ. अशोक शर्मा, एमएएससी के डॉ. राजदीप सिंह और प्रो संदीप गर्ग, वीपीसीआई के डॉ. नीतिन गोयल और डॉ. पारुल मृगपुरी, मेडिसिन से डॉ. ऋतिका सूद और डॉ. शिव राज मोणा, एआईआईए से डॉ. प्रशांत धर्मराजन और डॉ. सुजाता कदम शामिल हैं। इस मौके पर डीयू के एक्टिंग वीसी प्रो पीसी जोशी, डीन कॉलेजेज डॉ बलराम पाणि, रजिस्ट्रार डॉ विकास गुप्ता समेत डीयू के कई अधिकारी मौजूद थे।

Industrial Visit to VPCI DELHI University



Ghaziabad: The educational visit has its own importance in a career of a student who is pursuing a professional degree. The main objective of the lab visit is to provide students an insight into the practical applications of what they are learning in theory because; the oretical knowledge is not enough for making a good professional career. With an aim to go beyond academics, IMS School of Biosciences provided a golden opportunity to its students of M.Sc. Biotechnology,

Second Semester to visit Vallabhbhai Patel Chest Institute (VPCI), New Delhi on 30th March 2022. The visit was planned and executed by Dr. Umesh Kumar, Chairperson of, the IMS School of Biosciences, and Prof. Akanksha Jain.

The Vallabhbhai Patel Chest Institute (VPCI) is a unique postgraduate biomedical institution devoted to research, teaching, and patient care in the field of chest diseases. It is funded by the Department of Health and



Research, Ministry of Health and Family Welfare, Government of India, and regulated by the University of Delhi The Institute is ideally located in the heart of the main campus of the University of Delhi, providing the requisite academic environment.

The main objective of the visit was to provide a scientific platform to exchange information on the recent advances in the field of pulmonary diseases like Asthma, COPD, and Mycobacterium tuberculosis.

The institute is having national facility for Allergy testing. Dr. Vishwajeet Rohil, Professor & Head, Department of Clinical Biochemistry along with Dr. Sanjay Goel welcomed the faculties and students and felicitated the visit.

Overall, this educational tour provided an opportunity for all the students, to develop their research and scientific vision in their future scientific careers by getting excellent exposure to research in the host institute.

IMS Today
(May 2022)



Poster Making Competition for kids organised as a part of Swaccha Pakhwada on April 9, 2021



Pledge taking ceremony during observance of Vigilance Awareness Week on October 26, 2021



Kayakalp Assessment of VPCI on December 28, 2021



Republic Day Celebration at VPCI on January 26, 2022



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