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Abstract's Service

Bibliometric Indices of Scientific Journals: Time to overcome the obsession and think beyond the Impact Factor

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Journal Impact Factor (JIF) has been widely used for a long time as a proxy marker of journal prestige. However, off late, accuracy and reliability of JIF for evaluation of scientific journals has been increasingly questioned by numerous stakeholders in the field of scholarly publications. Having realized the perils and pitfalls of JIF, there is an increasing understanding among academia to develop and consider alternatives to the traditional JIF. It is possibly time for all concerned to understand the pros and cons of JIF to overcome this obsession. Limitations of JIF and possible alternative and emerging bibliometric indicators are being discussed in this article for the benefit of the readers of MJAFI.

A Randomized Trial of E-Cigarettes versus Nicotine-Replacement Therapy

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Background. E-cigarettes are commonly used in attempts to stop smoking, but evidence is limited regarding their effectiveness as compared with that of nicotine products approved as smoking-cessation treatments.

Methods. We randomly assigned adults attending U.K. National Health Service stop-smoking services to either nicotine-replacement products of their choice, including product combinations, provided for up to 3 months, or an e-cigarette starter pack (a second-generation refillable e-cigarette with one bottle of nicotine e-liquid [18 mg per milliliter]), with a recommendation to purchase further e-liquids of the flavor and strength of their choice. Treatment included weekly behavioral support for at least 4 weeks. The primary outcome was sustained abstinence for 1 year, which was validated biochemically at the final visit. Participants who were lost to follow-up or did not provide biochemical validation were considered to not be abstinent. Secondary outcomes included participant-reported treatment usage and respiratory symptoms.

Results. A total of 886 participants underwent randomization. The 1-year abstinence rate was 18.0% in the e-cigarette group, as compared with 9.9% in the nicotine-replacement group (relative risk, 1.83; 95% confidence interval [CI], 1.30 to 2.58; P<0.001). Among participants with 1-year abstinence, those in the e-cigarette group were more likely than those in the nicotine-replacement group to use their assigned product at 52 weeks (80% [63 of 79 participants] vs. 9% [4 of 44 participants]). Overall, throat or mouth irritation was reported more frequently in the e-cigarette group (65.3%, vs. 51.2% in the nicotine-replacement group) and nausea more frequently in the nicotine-replacement group (37.9%, vs. 31.3% in the e-cigarette group). The e-cigarette group reported greater declines in the incidence of cough and phlegm production from baseline to 52 weeks than did the nicotine-replacement group (relative risk for cough, 0.8; 95% CI, 0.6 to 0.9; relative risk for phlegm, 0.7; 95% CI, 0.6 to 0.9). There were no significant between-group differences in the incidence of wheezing or shortness of breath.

Conclusion. E-cigarettes were more effective for smoking cessation than nicotine-replacement therapy, when both products were accompanied by behavioral support. (Funded by the National Institute for Health Research and Cancer Research UK; Current Controlled Trials number, ISRCTN60477608.)

"Kiss myAsthma": Using a participatory design approach to develop a self-management app with young people with asthma

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Objective. Young people with asthma often lack engagement in self-management. Smartphone apps offer an attractive, immediate method for obtaining asthma information and self-management support. In this research we developed an evidence-based asthma app tailored to young peoples needs, created using a participatory design approach to optimize user engagement. This paper describes the participatory design process.

Methods. This multi-phased research included concept generation and ideation of app design by young people with asthma, and development of asthma information by the research team. Clinical review was sought regarding safety and accuracy of app content. Participants suggestions for improvement and any problems with the app were logged throughout. Our young co-designers were invited back to test a high fidelity prototype app using a "think aloud" process and completed a usability questionnaire.

Results. Twenty asthma patients aged 15-24 years contributed to the initial app design. Three respiratory specialists and two pharmacists suggested minor corrections to clinical terminology in the app which were all incorporated. Nine co-designers acted as expert reviewers of the prototype app, of whom eight completed a usability questionnaire. Median usability scores (maximum score 6) indicated high satisfaction with app content, usefulness and ease of use [median item score 5.3 (range 4.7-6.0)]. All feedback was incorporated to create an updated prototype app.

Conclusions. A clinically sound asthma app has been developed which is considered highly acceptable to the young co-designers. A six-week test of the engagement, acceptability, and usefulness of the app in young people not involved in the participatory design will follow.

Re-evaluation of the diagnostic value of fractional exhaled nitric oxide & its impact in patients with asthma

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Background & objectives. The diagnostic value of fractional exhaled nitric oxide (FeNO) in patients with asthma remains controversial. This study was aimed to re-evaluate the diagnostic value of FeNO in specific groups with asthma and identify potential factors associated with FeNO.

Methods. FeNO measurement and bronchial provocation test (BPT) or bronchodilator test (BDT) were performed in patients with suggestive symptoms for asthma. Correlation analysis was performed, and receiver-operating characteristic (ROC) curves and area under the curve (AUC) were calculated to evaluate the accuracy of FeNO in diagnosis.

Results. A total of 265 (66.3%) patients with asthma were identified in 400 individuals suspected to have asthma from October 2014 to June 2015. Positive correlations of gender (r=0.138, P=0.005), atopy (r=0.598, P<0.001) and rhinitis (r=0.485, P <0.001) but negative correlations of age (r=−0.220, P <0.001) and the cumulative methacholine dosage with a 20 per cent decrease in forced expiratory volume in one second (r=−0.197, P <0.001) with FeNO were found. AUC of FeNO in whole population and patients with atopy and rhinitis was 0.728 [95% confidence interval (CI) 0.675-0.781, P <0.001] and 0.752 (95% CI 0.640-0.865, P <0.001), while the cut-offs were 23.5 and 44.5 parts per billion (ppb), respectively, rendering sensitivities, specificities, positive predictive value and negative predictive value of 79.9, 54.7, 77.9, 58.1 and 78.7, 67.9, 89.2 and 48.7 per cent, respectively. The cut-off of FeNO with specificity of 90 per cent ($FeNO_{90}$) for all patients and a sub-group of patients with atopy and rhinitis was 59.5 and 90.5 ppb, respectively, while $FeNO_{90}$ decreased by 12 ppb with every 10 years.

Interpretation & conclusions. Our findings show that the diagnostic value of FeNO varies in different groups of patients with asthma, thus, the cut-off point should be adjusted in different asthmatic sub-populations. A cut-off point of FeNO with a specificity >90 per cent could decrease the false-positive rate.

Hesperetin, a Citrus bioflavonoid, prevents IL-1β-induced inflammation and cell proliferation in lung epithelial A549 cells

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Hesperetin, a Citrus bioflavonoid, exhibits anticancer, anti-inflammatory and antioxidant properties. However, its action and mechanism in inflammation-induced lung cancer is unknown. We have investigated anticancer effects of hesperetin in IL-1β-stimulated lung adenocarcinoma cell proliferation and COX-2-mediated inflammation. The human lung adenocarcinoma A549 cells were serum-starved with or without HN (100 μM) for overnight and stimulated with IL-1β for varying durations. Cell viability and proliferation were assessed by MTT and wound healing assays. Cell cycle progression was measured by flow cytometry, and RT-PCR and immunoblotting methods were used to examine the expression COX-2 mRNA and protein, respectively. Protein stability assessed by cycloheximide chase assay. IL-1β caused a time- and dose-dependent increase in cell viability and proliferation, expression of COX-2 at transcription as well as translation levels, increased the stability of COX-2 protein, and PGE2 production while HN significantly decreased these changes. Further, IL-1β stimulated increased phosphorylation of ERK-1/2 and p65 subunit of NF-κB, which were reversed by HN in A549 cells. These results show that HN could inhibit IL-1β-stimulated cell proliferation, COX-2 expression and its regulation at translation level and PGE2 synthesis in A549 lung epithelial cells, indicating its anti-inflammatory and anticancer potential in lung cancer cells.

Revisiting anatomical variants on screening chest radiographs in Indian adolescents: A cross sectional observational pilot study

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Background. Knowledge of normal variation and measurements on a chest radiograph is essential to interpret any abnormality. There is paucity of information about normal measurement ranges and variations in young adolescents, particularly from Indian subcontinent. The aim of this study was to analyze certain normal variations on screening chest radiographs of healthy Indian adolescents and the objectives were to measure/assess (1) degree of inspiration, (2) cardiothoracic ratio (CTR), (3) presence of gastric fundic bubble, (4) fundocupolic distance, (5) presence of splenic flexure, (6) difference in height of diaphragmatic domes and (7) effect of inspiration on the CTR.

Methods. Digital chest radiographs obtained during routine medical examinations for all consecutive medical graduate aspirants in the year 2016 at a medical college, were analyzed for the above mentioned parameters using DICOM viewing software.

Results. A total of 558 chest radiographs were analyzed. The mean age of the subjects was 18.50 (SD = 1.002) (range: 17–22 years). There were 497 (89.1%) male and 61 (10.9%) female. Degree of inspiration was at 5th, 6th, 7th and 8th ribs in 29 (5.1%), 259 (46.4%), 264 (47.3%) and 6 (1%) respectively. Mean maximum transverse cardiac diameter, internal thoracic diameter, CTR were 1153.22± 120.01, 2935.24 ± 224.86 and 0.39 ± 0.03 respectively. Females had slightly higher CTR (0.40 ± 0.035) as compared to the males (0.39 ± 0.032) (p = 0.009). Gastric fundic bubble was visualized in 91% subjects. Mean fundo-cupolic distance was 8.75 ± 8.00. Mean value for difference in the level of two domes of diaphragm was 15.28 ± 5.38.

Conclusion. The study highlights normal range of inspiration, CT ratio, fundocupolic distance and diaphragmatic dome level difference on screening chest radiographs in healthy Indian adolescents.