

Abstracts' Service

Keeping in pace with the new Biomedical Waste Management Rules: What we need to know!

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Medical Journal Armed Forces India Research 2019;75:240–245

Biomedical Waste Management Rules were first implemented in our country on 20th July 1998. Thereafter, the rules have undergone periodic updates and amendments in the years 2003 and 2011. Latest Biomedical Waste Management Rules, 2016, and (Amendment) Rules, 2018, were an update and simplification of BMW disposal as compared with the previous version, keeping in pace

with the changes in the requirements of the health-care setup. Although exhaustive, numerous medical devices/products/kits did not find any mention even in the latest amendment of the rules. Thus, this article aims to bring out the key points to be known by all health-care workers and the gray areas which require clarification and inclusion in the rules for a completeness of the said rules.

Histotyping of Indian thymomas: A clinicopathologic study from north India

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The Indian Journal of Medical Research 2019;150:153–160

Background and objectives. Thymomas are rare, but most common anterior mediastinal lesions. The histomorphologic spectrum of thymic epithelial tumours (TETs) in Indian population has not been explored in depth. This study was aimed to assess the histomorphology of TETs in the Indian patients and correlate clinical parameters with pathological features.

Methods. It was a retrospective study conducted in a tertiary referral hospital in north India. All morphologically confirmed cases of TETs since 2009 were included. Clinical details and histology slides were reviewed using the Modified Masaoka-Koga staging system and WHO 2015 classification. Clinicopathological correlation and survival analysis were done. A comparative review from other published Indian studies was performed.

Results. A total of 219 cases of TETs (138 resections

and 81 biopsies) were identified. The most common histomorphologic type was B2, and the most frequent stage was I. Types A/AB were common in older age ($P < 0.01$). Clinically, higher stage tumours were found mostly in men ($P < 0.01$), and these were Type B thymomas ($P < 0.01$). *Myasthenia gravis* was more common in women ($P < 0.02$) and in lower stages ($P < 0.05$). Survival analysis revealed significant association between recurrence and tumour stage. Although thymic carcinoma was diagnosed on biopsy, no resectable case was identified.

Interpretation and conclusions. Our findings showed that the thymomas in Indian patients were most commonly Stage I tumours of B2 and AB histotypes. Resected thymic carcinomas were conspicuously absent in our study. More studies need to be done to establish the frequency and biology of TETs from India.

Antibiotic stewardship initiative in a Medicine unit of a tertiary care teaching hospital in India: A pilot study

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The Indian Journal of Medical Research 2019;150:175–185

Background and objectives. The models for implementation of antibiotic stewardship programme (ASP) in the acute care settings of developing countries are lacking. In most of the hospitals, patient turnover is high and a proper system for recording antibiotic-related information and tracking hospital-acquired infections is not in place. This pilot

study was conducted in a tertiary care teaching hospital in north India to assess the feasibility of implementation of an ASP in a Medicine unit and to evaluate the effect of implementation as per the criteria applicable in this set up.

Methods. A pre-post-quasi-experimental non-randomized study was conducted in two phases. In the first phase,

current practices in the Medicine wards were observed. In the second phase, the ASP was implemented in a single Medicine unit, along with prospective audit and feedback, tracking of the process, as well as outcome measures. Patient risk stratification, blood culture on day one, day 3 bundle, dose optimization, de-escalation and intravenous to oral conversion of antibiotics were the key elements focused upon.

Results. There was a significant improvement in the

appropriateness of antibiotic prescription (66 vs. 86%, $P<0.001$) and reduction in the mean number of antibiotics used per person (4.41 vs. 3.86, $P<0.05$) along with decrease in the duration of hospital stay (17 vs. 14 days, $P<0.05$). There was a significant improvement in sending of blood cultures on day one during the stewardship phase ($P<0.001$).

Interpretation and conclusions. The ASP approach used in our pilot study may be feasible and beneficial. However, it needs further confirmation in other settings and on a large scale.

Detection of heterogeneous vancomycin-intermediate *Staphylococcus aureus*: A preliminary report from south India

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The Indian Journal of Medical Research 2019;150:194–198

Background and objectives. Although there are reports of heterogeneous vancomycin-intermediate *Staphylococcus aureus* (hVISA) across the globe, there is a lack of reliable data on hVISA in India. The present study was undertaken to determine the rate of hVISA among the methicillin-resistant *Staphylococcus aureus* (MRSA) isolates, and to compare the brain heart infusion agar with vancomycin 4 µg/ml (BHIV4) method with population analysis profile-area under the curve (PAP-AUC) method for the detection of hVISA and to study the distribution of mobile genetic element that carries methicillin-resistance gene *SCCmec* (Staphylococcal cassette chromosome mec) types among these isolates.

Methods. BHIV4 and PAP-AUC methods were employed to detect hVISA among 500 clinical isolates of MRSA. *SCCmec* typing of these isolates was performed by multiplex polymerase chain reaction. The clinical presentation, treatment with vancomycin and outcome was documented for patients with hVISA.

Results. The rate of hVISA was 12.4 per cent by PAP-AUC method. Sensitivity, specificity, PPV, NPV and kappa agreement of BHIV4 with PAP-AUC was 58.06, 93.15, 54.55, 94.01 per cent and 0.498, respectively. The isolation of hVISA was significantly ($P<0.01$) higher in patients admitted to intensive care units and wards than in patients attending the outpatient departments. Only 38 per cent of the patients received vancomycin as therapy. Majority of the hVISA isolates carried *SCCmec* type V or IV.

Interpretation and conclusions. The rate of hVISA isolation in our study was 12.4 per cent. The sensitivity of the BHIV4 screening test was low, and was in moderate agreement with PAP-AUC test. *SCCmec* type V was the predominant type seen in half of the isolates. More studies need to be done in different parts of the country on a large number of isolates to confirm our findings.