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Poster communications

P1: Blood Stream Infections (BSI) associated drug resistance and acute phase protein in a Kolkata based tertiary care hospital

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Rationale: A careful monitoring of drug resistance pattern in BSI is the cornerstone of successful implementation of antibiotic policy in a hospital and the knowledge of acute phase protein level shift in BSI is helpful in controlling such infections. In this study, recent drug resistance pattern and acute phase reactant activity were monitored in a tertiary care hospital in Kolkata.
Objectives: Antibacterial and antifungal drug sensitivity tests of the haematogenous isolates and their corresponding acute phase reactant protein were monitored to formulate proper empirical treatment in relation to the status of acute phase reaction.
Materials and methods: Drug sensitivity tests were done according to CLSI guidelines following cultures in Bactec 9050 automated blood culture system and CRP was estimated by turbidometry.
Results and conclusion: Microorganisms isolated were *Klebsiella* spp. (27.33%), *Staphylococcus* spp. (18.12%), *E. coli* (13.04%), *Candida* spp. (13.04%), *Pseudomonas aeruginosa* (7.45%), *Streptococcus pneumoniae* (3.11%), *Salmonella* spp. (1.8%), *Corynebacterium* spp. (1.8%). The isolates showed high resistance against cephalosporin group followed by Quinolones and Aminoglycosides. In general, all isolated *Klebsiella* spp. were MDR strains and showed more resistance than other bacterial isolates. Staphylococci were significantly resistant to macrolides. *Candida* spp. was moderately resistant to azoles except Voriconazole. They were sensitive to Amphotericin B, Anidulafungin, Micafungin and Caspofungin. Maximally obtained CRP values (Mean ± SD in mg/L) in the affected patients varied widely according to the infective agent: *Pseudomonas aeruginosa* (203.92 ± 191.87), *Candida* spp. (170.46 ± 153.785), *E. coli* (170.33 ± 102.55), *Staphylococcus aureus* (132.4 ± 88.48), *Klebsiella* spp. (99.51 ± 61.462). Thus is conclusion we may say that there is an overwhelming Cephalosporin Drug resistance among BSI isolates in Kolkata mainly affecting *Klebsiella* spp., while acute phase reactants were very prominent in *Pseudomonas* spp. and were minimum in *Klebsiella* spp. infection.

P2: Characterisation of bacterial isolates from the burn wounds of patients admitted in a tertiary level health care facility in northern India

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Rationale: Burns are one of the most common and devastating forms of trauma. In patients with severe burns over 40% of the total body surface area, 75% of all deaths are currently related to sepsis from burn wound infections.
Objectives: The present study was carried out to know the antimicrobial susceptibility pattern of the bacterial isolates recovered from the burn wounds, so that the infection control programme can be strengthened.
Material and methods: The study was carried out in the Department of Microbiology, Pt. B.D. Sharma, PGIMS, Rohtak. A total of 408 isolates recovered over a period of six months were identified and their antibiograms determined by Kirby Bauer disk diffusion method.
Results: Among the gram negative organisms, the commonest isolates were *Pseudomonas aeruginosa* (53%), followed by *Escherichia coli* (10%), *Enterobacter* species (10%), followed by others. *Staphylococcus aureus* accounted for 10% of the total isolates. In case of *P. aeruginosa*, piperacillin + tazobactam was the most effective drug followed by meropenem and amikacin. In case of *Escherichia coli* meropenem was the most effective antimicrobial agent followed by amikacin and ofloxacin. In case of *Staphylococcus aureus* linezolid was the most effective agent followed by doxycycline and erythromycin.
Conclusion: The bacterial isolates were found to be highly resistant to commonly used antimicrobial agents in our hospital. Admission surveillance cultures should be done to screen patients with colonization by antibiotic resistant organisms. Strict enforcement of infection control practices and antimicrobial rotation programme can reduce the burden of multi-drug resistant organisms.

P3: Microbiological surveillance of air quality in critical care areas by the conventional settle plate techniques

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Rationale: Air remains as a mean for nosocomial transmission and therefore a matter of concern for control of infection in hospitals.

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Although there are no uniform consensus on either the standards for surveillance, methodology for monitoring or the levels of acceptable contamination, it still remains a fact that we need to have some criteria to monitor air quality in atleast the critical care areas.
Objective: To monitor the air quality in the critical care areas by settle plate techniques.
Material and methods: This retrospective study was done from Oct 2011 to Oct 2012 in Christian Medical College and Hospital Ludhiana. Air quality surveillance in the Operation theatres, cardiothoracic unit, preterm nursery, bone marrow transplant unit, intensive care unit, burn unit, and dialysis unit were performed using the settle plate technique as per standard protocols. The Petri dishes containing Blood agar and MacConkey"s agar are left open for half to one hour. The plates are incubated at 37°C for 24 hrs. After incubation, the colonies on each plate were counted in a given period of time.
Results: In the settle plate technique, the bio-load (mean colony forming unit (cfu/mm^3) was found to beyond the acceptable limit in the OT, PTN, ICU, Burn unit, and within the acceptable limit in CTU, BMT and Dialysis unit.
Conclusion: Though settle plate method may be regarded as a crude measure of airborne contamination, in places without other facilities it can still provide a simple and cost effective way of enumerating the contamination rate of horizontal surfaces at multiple points.

P4: The emerging threat of *Burkholderia cepacia* and *Stenotrophomonas maltophila* – A study from a tertiary care centre

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Rationale: *Burkholderia cepacia* and *Stenotrophomonas maltophila* have been increasingly recognized as emerging nosocomial pathogens in the recent years. Both these are intrinsically resistant to a plethora of antimicrobial agents which hamper the treatment of such infections.
Objectives: This study is to assess the emerging problem of these agents in a 1500 bedded teaching hospital with an attempt to analyze the predisposing factors and the antibiotic sensitivity profile.
Materials and method: All isolates of *B cepacia* and *S.maltophila* isolated from clinical samples in the last two years were studied in detail for the clinical profile, risk factors and antibiotic sensitivity pattern.
Results: We found that in 2011 out of 5225 isolates there were 15 *B. cepacia* and 12 *S. maltophila* whereas in 2012 out of 5225 isolates it was 34 and 16 respectively. These were isolated from infections of respiratory tract (44%), blood stream (27%), soft tissue (24.6%) and urinary tract (3.8%). All the patients were on indwelling devices. The other important risk factors associated were broad spectrum antibiotics (82%), followed by prolonged hospital stay (80%), Diabetes mellitus (32%), c/c lung diseases (32%), cardiac diseases (25%), surgery (23%), liver diseases (16%) and burns (6%). Among the *B. cepacia* isolates 61% showed resistance to levofloxacin, 46% to chloramphenicol and 16.3% to Trimethoprim-sulfamethoxazole. Two isolates of *S. maltophila* were resistant to Trimethoprim-sulfamethoxazole with 21% and 10% resistance to Ceftazidime to Chloramphenicol respectively.
Conclusions: *B. cepacia* and *S. maltophila*can be considered as important emerging nosocomial pathogens in our hospital also. Since they can easily colonize the hospital environments and are often resistant to disinfectants strict infection control practices are needed to limit their spread.

P5: Central Line Associated Blood Stream Infection (CLABSI) – Creating awareness about infection acquired through the central lines

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This is a retrospective study comparing the sampling of central lines in association with blood cultures that is essential for the diagnosis of a CLA-BSI, between two years, 2010 and 2012 after a campaign for proper sampling was initiated in 2011.

The objectives were, 1) To compare the rate of CLA-BSI correctly diagnosed before and after creating awareness, 2) To find the prevalence and the unit that has adhered to the correct method of diagnosis of CLA-BSI after the awareness programme and 3) To find the area of intervention needed in different units to improve sampling and detection of CLA-BSI.

Unit wise sampling pattern will give an idea about the kind of intervention needed there to improve awareness and sampling efficiency.

In the year 2010 there was no specific programme to detect CLA-BSI. An intensive campaign was initiated in 2011 by the Infection Control Team. This included:

1. Training for Link nurses who were the nurses who report to the ICN from each ward.
2. Follow-up of each cannula that was sent, especially those without simultaneous blood culture.
3. Encouraging sampling of cannulae and blood culture when there is fever without any obvious site of infection.

A total of 158 cannulae were sent for culture during the year 2010, while in 2012, 276 cannulae were sampled. Of these, in 2010, while incomplete sampling occurred in 39%, this was reduced to 33% in 2012 with an overall increase in the number of correctly diagnosed CLABSI from 13 to 27 cases. The prevalence of different isolates is described and compared between the two years. While the CVTS unit has reduced its incomplete sampling from 96% to 89%, more sampling resulted in the pediatric surgery unit coming up with more indeterminate results. A few cases where awareness resulted in reduced morbidity are also discussed.

Hence though the campaign to detect more CLABSI has to go on, proper training in sending samples and care of central lines is essential to make the campaign more effective.

P6: Strict contact isolation – The only way forward

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Increasing rates of newer β-lactamases as ESBLs, AmpC and carbapenamases that have emerged worldwide are a cause of grave concern. Presence of ESBLs and Amp-C-β-lactamases in a single