ABSTRACT

Objective: To evaluate the epidemiology, antibiotic susceptibility and clinical outcome of gram negative bacteremia.

Methods: A prospective observational study among 60 patients with gram negative bacteria grown in blood cultures admitted in a tertiary care hospital. Gram negative bacteria are identified by standard laboratory methods (BACTEC system) and antibiotic susceptibility testing was done by disk diffusion and automated VITEK systems. Clinical outcome is assessed by serial MSOFA scoring.

Results: Of the 60 study population 58% were male and the predominant age group contribution was between 61-70 years. The most common empirical antibiotic started was Ceftriaxone (49%). Only 5% of the study population received antibiotic within first hour of suspicion of sepsis. Almost half of the patients received antibiotic >3 hours after suspicion of sepsis ( n=32 , 53%) which is considerably greater. The most common isolate was E.coli. ESBL was the most common resistant strain(53%). The overall highest incidence was ESBL producing E.coli (37%). All the gram negatives exhibited high level of resistance to third generation cephalosporins and fluoroquinolones. 63% of the study population showed clinical improvement. There was a significant association between appropriateness of empirical antibiotic choosen, timing of antibiotic initiation, duration of antibiotic treatment , MSOFA scoring and clinical outcome(p<0.05).

Conclusion : Our study showed a significant prevalence of ESBL producing E.coli compared to Non ESBL producers. Most of the gram negative isolates were resistant to
third generation cephalosporin, which was the commonly chosen empirical antibiotic. From the above study we could get a picture of the existing battle between gram negative bacteria and antibacterial agents. In such situations we clinicians are posed on a burden to stand guard both existing antibiotics and ensuring clinical cure in patients without compromising quality of care, economic and social factors. Thus it can be concluded that a change in choice of empirical antibiotic has to be made and with this results we could make changes in the existing hospital policy and keep an eye on a better antibiotic stewardship.