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A Prospective Study on Concurrent Drug Utilization Review of Piperacillin -Tazobactam in a Tertiary Care Teaching Hospital in Kolkata

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Abstract:

This study was carried out to review the proper utilization of piperacillin-tazobactam and its outcome in a tertiary care hospital. It was a concurrent prospective observational study with a duration of five months. During the course of study, the files of all admitted patients who received piperacillin-tazobactam therapy were concurrently reviewed. According to this study, the major indication for piperacillin-tazobactam was found in urinary tract infection (151/38;25.83%). 76% of the patients were treated as empirical therapy. Culture data was obtained for 36 patients out of which, in 27 patients (75%), sensitivity was observed and in 9 patients (25%), resistance to piperacillin-tazobactam was observed. *Acinetobacter baumannii* (2.7%), *Burkholderia cepacia* (5.5%), *Escherichia coli* (2.7%), *Klebsiella pneumonia* (8.3%), *Pseudomonas aeruginosa* (2.7%) and *Serratia fonticola* (2.7%) were found to be resistant to piperacillin-tazobactam. The duration of therapy for 2 days was found in 17% of the patients. Augmentin (amoxicillin) (11.54%) and ceftriaxone (11.54%) were utilized prior to piperacillin-tazobactam more often than other antibiotics. While, metronidazole (16.67%) and meropenem (60.98%) were utilized along with and after discontinuation of piperacillin-tazobactam respectively. Frequent empirical use without culture sensitivity test leads to increased risk of piperacillin-tazobactam resistance in health care system. Hence, rational administration of the drug based on sensitivity reports, in proper dose and duration of therapy is recommended. Based on our study, it was also found that decrease in platelet count was the common ADR (Adverse Drug Reaction) of piperacillin-tazobactam. So, piperacillin-tazobactam should be used with caution when prescribed with other antiplatelet drugs.

Key words:

Piperacillin-tazobactam, Antibiotic resistance, Empirical therapy, Antibiotic dosing, De-escalation, ADR

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