STUDY ON PRESCRIBING PATTERNS OF PARENTERAL ANTIBIOTICS IN MEDICAL AND SURGICAL UNITS OF HOSPITAL BATU PAHAT

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ABTRACT

Objective: To determine the prescribing patterns of parenteral antibiotics in the medical and surgical units of Hospital Batu Pahat including the single agent and combination agent used most frequently for the treatment, the most commonly used agent, the most common infection treated and the antibiotics used, and the total cost spent on parenteral antibiotics.

Methods: Medical records of all patients who received parenteral antibiotic therapy whilst in the medical and surgical units of Hospital Batu Pahat between 1st December, 2008 and 31st January, 2009 were reviewed. A data collection form was used to collect data on those patients (please refer to appendix at the last page).

Subject: 131 patients who received parenteral antibiotic therapy in medical unit and 159 patients in surgical units during the study period were taken into account for this study.

Result: The top three parenteral antibiotics used in the medical and surgical units were Metronidazole (85/290, 29.3%), Amoxicillin plus Calvulanic acid (Augmentin) (76/290, 26.2%), and Ampicillin plus sulbactam(unasyn) (65/290,22.4%) injection. Augmentin injection (45/131, 34.4%) was the most frequently used single agent for the treatment in medical units whereas unasyn injection (37/159, 23.3%) was the most frequently agent used in surgical units. The combination of Cefoperazone plus Metronidazole was widely used in both medical (5/131, 3.8%) and surgical units (31/159, 25.8%). Most commonly treated infections in medical units were respiratory tract (42/131, 32.1%) and cardiovascular infection (24/131, 18.3%) which were usually treated with Augmentin 1.2 g tds. Gastrointestinal infections (44/159, 27.7%) and endocrine system infections (21/159, 13.2%) were the major indications for parenteral antibiotic therapy in surgical unit. For gastrointestinal infection, the combination of Cefoperazone 1 g bd and Metronidazole 500 mg qid was usually used for the treatment or as prophylactic agent while Unasyn 1.5 g tds was used as prophylactic agents for endocrine infection. Unasyn injection (RM 6709.56/ RM34118.12, 19.7%) accounted for a major part of the total cost spent for parenteral antibiotics in both medical and surgical units during the study period.

01. INTRODUCTION

An antibiotic is a drug that kills or slows the growth of bacteria. Antibiotics are one class of "antimicrobials", a larger group which also includes anti-viral, anti-fungal, and anti-parasitic drugs. They are relatively harmless to the host, and therefore can be used to treat infections. The term originally described only those formulations derived from living organisms, but is now applied also to synthetic antimicrobials, such as the sulfonamides. Antibiotics are small molecules with a molecular weight less than 2000 and they are not enzymes. **www.antibotic.com.*

Antibiotics were labeled "magic bullets": drugs which targeted disease without harming the host. Antibiotics are not effective in viral, fungal and other nonbacterial infections, and individual antibiotics vary widely in their effectiveness on various types of bacteria. Some specific antibiotics (called "narrow-spectrum antibiotics") target both gram-negative or gram-positive bacteria, and others are more wide-spectrum antibiotics. The effectiveness of individual antibiotics varies with the location of the infection and the ability of the antibiotic to reach this site. Oral antibiotics are the simplest approach when effective, with intravenous antibiotics reserved for more serious cases. Antibiotics may sometimes be administered topically, as with eye drops or ointments. **www.antibotic.com*

Antimicrobial drugs can be classified in several groups. These include by their chemical structure for example beta-lactams or aminoglycosides ,also from their mechanism of action for example , inhibitor of cell wall synthesis:penicillins, cephalosporins, carbapenams, and monobactams .A number exert their antimicrobial effect by targeting the bacterial ribosome known as protein synthesis inhibitor .It consist of tetracyclines,aminoglycosides,macrolides,chloramphenicol,clindamycin,linezolid and quinolone.

Antibiotic resistance is the ability of a microorganism to withstand the effects of antibiotics. It is a specific type of drug resistance. Antibiotic resistance evolves via natural selection acting upon random mutation, but it can also be engineered by applying an evolutionary stress on a population. Once such a gene is generated, bacteria can then