Guidelines for Antibiotic Use

Madam, Treatment of infections has become problematic because of increasing global antimicrobial resistance. This situation has risen to alarming proportion at our part of the world. The reason are many folds. One of the major reasons is antibiotic misuse and over use. Factors that contribute to antibiotic overuse include lack of education, patient's expectations and economic incentives. It should be kept in mind that "Most expensive therapy is the one that is not effective". In order to make our antibiotic therapy more effective following guidelines will be useful, these are being used in the West for long. Unfortunately in our setting very few hospitals have adopted this policy. The guidelines are as follow.

- Suitable sample must be sent before starting antibiotic treatment. Use transport medium. Do not send dry swab.
- Except in immunocompromised patients fever alone without further signs of infection is no indication for antibiotic therapy (Antibiotics are not antipyretics!).
- Antibiotic therapy should not be prolonged unnecessarily; in many cases antibiotics can be discontinued three days after defervescence.
- The following possibilities must be considered if the patient fails to respond to antibiotic therapy after two to three days of treatment.
- Causative pathogen is resistant to the antimicrobial agent.
- Insufficient tissue penetration at the site of infection.
- Antibiotic is infective in vivo despite in vitro sensitivity.
- Abscess, foreign body related infection, impaired immunity.
- Non-bacterial etiology (drug fever, viral infection).
- The initial empiric treatment (usually combination therapy) aims to cover nearly all potential pathogens and is generally expensive. Less expensive alternatives, which are often even more efficacious, should be chosen as soon as the results of susceptibility testing are available.
- When choosing an antibiotic economical aspects should also be considered. Older, equally efficacious drugs are often much more cost-effective. Expensive antibiotics should only be given when strictly indicated.
- Preoperative prophylaxis should not be prolonged unnecessarily! Usually a single preoperative dose is sufficient.
- Drug monitoring is recommended for antibiotic with a narrow therapeutic range (amino glycosides, vancomycin) in order to minimize toxicity especially in-patients with impaired renal function.
- Allergic predisposition must be excluded before beginning antimicrobial chemotherapy.

Combination therapy is indicated:

In poly-microbial infections.

- For empiric treatment.
- in order to reduce resistance of certain species (e.g. Pseudomonas, M. tuberculosis).
- in order to take advantage of synergistic effects (e.g. for treatment of endocarditis or in imrnunoconiproniised patients).
- The antibiotic regimen should be chosen and adjusted individually with regard to the patient's age, immune status, metabolic condition, nutritional state, water and electrolyte balance, renal and hepatic function.
- Selection of an adequate antibiotic agent must also take into consideration the conditions at the site of infection e.g. pH, aerobic/anaerobic milieu and Amino glycosides are ineffective at low pH or under anaerobic conditions, Tissue penetration of the drug.
- When choosing antibiotic for empiric treatment differentiation between hospital acquired and

community acquired infections is important because of the different microbial spectrum that needs to be covered.
account.

Interactions with other drugs should be taken into

- Antibiotic should be used with care in pregnancy, children and lactating mothers.

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