

ANTIMICROBIALS - I

OVERVIEW OF ANTIBIOTICS

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Abstract: Antibiotics are used for treating bacterial infections. They are classified based on origin (synthetic or natural), mechanism of action, type of action (bacteriostatic or bactericidal) and spectrum (narrow or broad). Majority of antibiotics used in clinical practice such as cephalosporins, carbapenems, fluoroquinolones have broad spectrum of activity. Broad spectrum antibiotics have disadvantages of alteration of host microbiome and selection of resistance. To overcome the problem of antibiotic resistance, antibiotic surveillance and antibiotic stewardship measures were recognized as a policy by the World Health Organization, as a component of which a new classification of antibiotics called as Access, Watch, Reserve (AWaRe) was introduced. This classification helps in guiding the selection of antibiotic and prevention of their abuse and overuse.

Keywords: Antibiotics, Spectrum, Access Watch

Reserve Classification.

Points to Remember

- **First generation cephalosporins have narrow spectrum and possess strong activity against Gram positive bacteria.**
- **Beta lactam / beta-lactamase inhibitors cross the blood brain barrier sub-optimally and hence should not be used in treating meningitis.**
- **Moxifloxacin and Levofloxacin should be reserved for use in multidrug resistant TB.**
- **Recent evidence suggest a similar efficacy for bacteriostatic and bactericidal antibiotics in treating infections.**
- **Narrow spectrum antibiotics should always be chosen over broad spectrum antibiotics whenever causative infection is identified.**
- **AWaRe classification of antibiotics by the WHO comprises of three categories - Access, Watch and Reserve, mainly based on the antibiotic resistance threshold.**
- **Antibiotic use as first and second line agents for common infections, needs to be improved from the 'Access' category of AWaRe Classification.**

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