General Principles of Chemotherapy

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- Antibiotics are drugs that are used to inhibit or kill the growth of microorganisms.
- “MIC” means the lowest concentration of drug that inhibit visible growth after an overnight incubation.
- “MBC” It is the lowest concentration of the drug that kills at least 99.9% of total bacterial inoculums.
- Post antibiotic effect (PAE) refers to persistant suppression of bacterial growth after limited exposure to an antimicrobial agent.

- Salient features for rational effective use of antibiotics in PAE:
- 1. Antibiotic should be present at the time of wound closure
- 2. It must be effective or active against most infected microorganisms(broad spectrum).
- 3. Prevent occurrance of resistance and loss of normal Flora.
- Normal flora has following advantages:
- 1. Make host defense mechanism strong
- 2. Produce vitamin B and K
- 3. Produce antibacterial substance known as bacteriocins

- Sensitivity means “if the dose or concentration of drug produces the desired pharmacological effects on microorganisms without being toxic to human cells, the microorganisms are said to be sensative to the drug.
- Resistance means If the dose or concentration of drug does not inhibit the growth or kill the microorganisms, the microorganisms are said to be resistant to that particular drug.

- “Super infection” It refers to the occurrance of new infection during the treatment of primary infection.
- Super infection may occur due to Following:
- Non selective antibiotic
- Narrow spectrum
- Use of inappropriate drug
- Wrong dose
- Use of inappropriate therapy

- “Combination Chemotherapy” means the use of more than one antimicrobial agents for the treatment of particular infection.
- Following are some clinical indications where combination chemotherapy is used.
- 1. Treatment of mixed bacterial infection
- 2. Treatment of severe infection having unknown cause
- 3. To enhance antimicrobial effect
- 4. To prevent resistance