DIFFERENT CLASSES OF ANTIBIOTICS - AN OVERVIEW

**Key:**
- **COMMONLY ACT AS BACTERIOSTATIC AGENTS, RESTRICTING GROWTH & REPRODUCTION**
- **COMMONLY ACT AS BACTERICIDAL AGENTS, CAUSING BACTERIAL CELL DEATH**

### B-LACTAMS
- **MOST WIDELY USED ANTIBIOTICS IN THE NHS**
- **MODE OF ACTION**
  - Inhibit bacteria cell wall biosynthesis.
- **EXAMPLES**
  - Penicillins (shown) such as amoxicillin and flucloxacillin; Cephalosporins such as cefalexin.

### AMINOGLYCosIDES
- **FAMILY OF OVER 20 ANTIBIOTICS**
- **MODE OF ACTION**
  - Inhibit the synthesis of proteins by bacteria, leading to cell death.
- **EXAMPLES**
  - Streptomycin (shown), neomycin, kanamycin, paromomycin.

### CHLORAMPHENICOL
- **COMMONLY USED IN LOW INCOME COUNTRIES**
- **MODE OF ACTION**
  - Inhibit protein synthesis by bacteria, leading to cell death.
- **EXAMPLES**
  - Erythromycin (shown), clarithromycin, azithromycin.

### GLYCOPePTIDES
- **COMMON 'DRUGS OF LAST RESORT'**
- **MODE OF ACTION**
  - Inhibit the synthesis of RNA by bacteria, leading to cell death.
- **EXAMPLES**
  - Vancomycin (shown), teicoplanin.

### QUINOLONES
- **RESISTANCE EVOLVES RAPIDLY**
- **MODE OF ACTION**
  - Inhibit the synthesis of proteins by bacteria, preventing growth.
- **EXAMPLES**
  - Ciprofloxacin (shown), levofloxacin, trovafloxacin.

### OXAZOLIDINONES
- **POTENT ANTIBIOTICS COMMONLY USED AS 'DRUGS OF LAST RESORT'**
- **MODE OF ACTION**
  - Disrupt multiple cell membrane functions, leading to cell death.
- **EXAMPLES**
  - Daptomycin (shown), surfactin.

### SULFONAMIDES
- **FIRST COMMERCIAL ANTIBIOTICS WERE SULFONAMIDES**
- **MODE OF ACTION**
  - Do not kill bacteria but prevent their growth and multiplication. Cause allergic reactions in some patients.
- **EXAMPLES**
  - Prontosil, sulfanilamide (shown), sulfadiazine, sulfisoxazole.

### TETRACYCLINES
- **BECOMING LESS POPULAR DUE TO DEVELOPMENT OF RESISTANCE**
- **MODE OF ACTION**
  - Inhibit protein synthesis by bacteria, leading to cell death.
- **EXAMPLES**
  - Tetracycline (shown), doxycycline, lymecycline, oxytetracycline.

### MACROLIDES
- **SECOND MOST PRESCRIBED ANTIBIOTICS IN THE NHS**
- **MODE OF ACTION**
  - Inhibit the synthesis of proteins by bacteria, preventing growth.
- **EXAMPLES**
  - Macrolides such as amoxicillin and flucloxacillin; Cephalosporins such as cefalexin.

### ANSAMYCINS
- **CAN ALSO DEMONSTRATE ANTIVIRAL ACTIVITY**
- **MODE OF ACTION**
  - Inhibit the synthesis of proteins by bacteria, preventing growth.
- **EXAMPLES**
  - Geladanamycin (shown), rifamycin, naphthyomycin.

### STREPTOMGRAMINS
- **TWO GROUPS OF ANTIBIOTICS THAT ACT SYNERGISTICALLY**
- **MODE OF ACTION**
  - Inhibit the synthesis of proteins by bacteria, preventing growth.
- **EXAMPLES**
  - Pristinamycin IA (shown), Pristinamycin IA.

### LIPOPEPTIDES
- **INSTANCES OF RESISTANCE RARE**
- **MODE OF ACTION**
  - Inhibit the synthesis of proteins by bacteria, preventing growth.
- **EXAMPLES**
  - Daptomycin (shown), surfactin.

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