Chloramphenicol

- Isolated from *Streptomyces venezuelae* in 1947.
- Binds the 50S ribosomal subunit, preventing peptide bond formation.
- First antibiotic to be synthesized instead of extracted from a micro-organism.
- It is on the World Health Organization's List of Essential Medicines.
- Cost in the developing world of an intravenous dose is about $0.40–1.90.

Chloramphenicol

- Chloramphenicol has a broad spectrum of activity(including *Stap. aureus, Strep. pneumoniae*, and *E. coli* and Salmonella . It is not effective against *Ps. Aeruginosa)*.
- Extremely lipid-soluble; unbound to protein and is a small molecule. It has a large apparent volume of distribution and penetrates effectively into all tissues of the body, including the BBB, and eye.

Chloramphenicol

- Aplastic anaemia:
- Rare and sometimes fatal.
- Occurs weeks or months after treatment has been stopped, and a genetic predisposition may be involved.
- The highest risk is with oral chloramphenicol (affecting 1 in 24,000–40,000)[17] and the lowest risk occurs with eye drops (affecting less than one in 224,716 prescriptions).

Chloramphenicol

- Bone marrow suppression:
- Dose dependent toxicity(which occurs quite predictably once a cumulative dose of 20 g has been given).
- Fully reversible after stopping the drug.

Chloramphenicol

- Gray Baby Syndrome
- Occurs after intravenous use in newborn infants due to immaturity of liver enzymes (UDP-glucuronyl transferase), This causes several adverse effects, including hypotension and cyanosis.

Chloramphenicol

- The original indication was in the treatment of typhoid fever.
- Due to the presence of multiple drug-resistant *Salmonella typhi ,* it is seldom used for this indication except when the organism is known to be sensitive.
- Was considered as first-line drug for meningitis, it may be used with caution if there are no available alternatives.
- In preventing endophthalmitis, a complication of cataract surgery.

Linezolid

- New bacteriostatic synthetic antibiotic.
- Binds to the 50s ribosome, but has no cross resistance with other antibiotics.
- Active against G+ve organisms
- Approved for vancomycin-resistant *Enterrococcus faecium* infections; nosocomial pneumonia; community-acquired pneumonia; and skin infections.
- Reserved for treatment of infections caused by multidrug-resistant gram-positive bacteria including tuberculosis and Nocardia.

VRE and more

- **Teicoplanin:**
- A glycopeptide like vancomycin with similar mechanism and spectrum of activity.
- Long half life.
- Used in the prophylaxis and treatment of serious infections caused by Gram-positive bacteria, including **methicillin-resistant *Staphylococcus aureus* and *Enterococcus faecalis*.**
- **Daptomycin:**
- Active against vancomycin-resistant strains of enterococci and *S aureus*.