MATRIC NO: 17/MHS06/040

NAME: INEGBEDION ESE CELINE

LEVEL: 300

**BACTERIAL PROTEIN SYNTHESIS INHIBITORS**

A protein synthesis inhibitor is a substance that stops or slows the growth or proliferation of cells by disrupting the processes that lead directly to the generation of new proteins. Examples include Erythromycin, Clindamycin, Linezolid, Telithromycin, Streptogramins, Retapamulin and Chloramphenicol.

**ERYTHROMYCIN**

Erythromycin was first isolated in 1952 from the bacteria Saccharopolyspora erythraea. It is a type of bacterial protein synthesis inhibitor, which is used to treat a wide variety of bacterial infections.

**MECHANISM OF ACTION OF ERYTHROMYCIN**

Erythromycin displays bacteriostatic activity or inhibits growth of bacteria, especially at higher concentrations. By binding to the 50s subunit of the bacterial rRNA complex, protein synthesis and subsequent structure and function processes critical for life or replication are inhibited.

**USE OF ERYTHROMYCIN**

Erythromycin is used for the treatment of a number of bacterial infections which includes

-Respiratory tract infections (bronchitis, pneumonia, Legionnaires disease and pertussis

-skin infections

-chlamydia infections

-pelvic inflammatory disease,

-syphilis.

It may also be used during pregnancy to prevent;

-Group B streptococcal infection in the newborn,

-as well as to improve delayed stomach emptying.

It can be given intravenously and orally

**TOXICITY AND ADVERSE EFFECT OF ERYTHROMYCIN**

Problems that occur when treatment goes beyond the desired effect includes;

-Gastrointestinal disturbances such as diarrhea, nausea, abdominal pain, and vomiting, are very common because erythromycin is a motilin agonist. Therefore erythromycin tends not to be prescribed as a first-line drug.

-More serious side effects include arrhythmia with prolonged QT intervals, including torsades de pointes, and reversible deafness. Allergic reactions range from urticaria to anaphylaxis. Cholestasis, Stevens–Johnson syndrome, and toxic epidermal necrolysis are some other rare side effects that may occur.

-Studies have shown evidence both for and against the association of pyloric stenosis and exposure to erythromycin prenatally and postnatally.

-Exposure to erythromycin (especially long courses at antimicrobial doses, and also through breastfeeding) has been linked to an increased probability of pyloric stenosis in young infants.

-Erythromycin used for feeding intolerance in young infants has not been associated with hypertrophic pyloric stenosis.

-Erythromycin estolate has been associated with reversible hepatotoxicity in pregnant women in the form of elevated serum glutamic-oxaloacetic transaminase and is not recommended during pregnancy.

-It can also affect the central nervous system, causing psychotic reactions, nightmares, and night sweats.