NAME: NWACHUKWU CHINAZA

MATRIC NO: 17/MHS3/033

DEPARTMENT: ANATOMY

COURSE CODE: PHA 306

**QUESTION**

**A** drug used in treatment of Urinary Tract Infection causes brown coloration of urine. Explain in full detail, the pharmacology of the drug under the following;

-Name of the drug

--Antibacterial activity

---Mechanism of Action

----Pharmacokinetics

-----Adverse effects

**ANSWERS**

1. **NAME OF DRUG**

The name of the drug mentioned above is NITROFURANTOIN

1. **ANTIBACTERIAL ACTIVITY**

It is effective against many gram-positive and gram-negative organisms. It is bactericidal against most common urinry tract pathogens, including Ischerichia coli, Enterococci, Klebsiella, Staphylococcus saprophyticus and Enterobacter.coli (E.coli) and Non-ESBL-producing Enterobacter coli strains. Also, it interfers with the production of bacterial proteins, DNA and Cell walls.

1. **MECHANISM OF ACTION**

Nitrofurantoin is rapidly reuced in bacterial cells by nitrofuran reductase to multiple reactive intermediates that attack ribosomal proteins, DNA, Respiration, Pyruvate metabolism and other Macromolecules within the bacterial cell and as such, it inhibits the synthesis of protein.Nitrofurantoin is activated inside bacteria by reduction to unstable metabolites, which disrupt ribosomal RNA, DNA and other intracellular components it is bactericidal especially to bacteria present in acid urine.

1. **PHARMACOKINETICS**

It is absorbed rapidly and completely from the GIT tract

It gives urine a brown coloration

It is not recommended for treating pyelonephritis or prostasis

It is not used for pregnant women, children younger than one month and individuals with impaired renal function.

1. **ADVERSE EFFECTS**

Hemolytic anemia, Acute pneumonitis, Nausea, Vomiting, Diarrhea(watery or bloody), Nystagmus, Headache,Wheezing, Chest pain, Fever, Tiredness, Unexplained weight loss, Numbness, Body aches.