

Cotrimoxazole

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Cotrimoxazole

- WHO approved fixed-dose combination of sulphamethoxazole and trimethoprim in ratio of 5:1.

Mechanism of action

- Cotrimoxazole produces sequential blockade.
- Produces supra-additive effect.
- Two drugs interfere with two successive steps in the same metabolic pathway.
- Sulphamethoxazole inhibits folate synthetase.
- Trimethoprim inhibits dihydrofolate reductase enzyme.

Para-aminobenzoic acid (PABA)

Folate synthetase



Sulphamethoxazole



Dihydrofolic acid (DHFA)

Dihydrofolate reductase



Trimethoprim



Tetrahydrofolic acid (THFA)

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Pharmacokinetics

- Similar half life
- Optimum synergistic effect is seen at a concentration ratio of (Sulphamethoxazole to Trimethoprim) 20:1 in blood and tissue.
- Well absorbed after oral administration
- Parental also use
- Widely distributed to the various tissues such as CSF and sputum.
- Metabolized in liver
- Excreted mainly in urine

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Advantages of this combination

- Both are bacteriostatic but the combination has cidal effect
- Chances of development of bacterial resistance are also greatly reduced.

Adverse effects

- Well tolerated
- Skin rashes
- Gastrointestinal (GI) disturbance
- Exfoliative dermatitis
- Erythema multiforme
- Stevens-Johnson syndrome
- Nausea, vomiting, glossitis and stomatitis.
- Megaloblastic anemia
- Bone marrow suppression with leukopaenia, neutropaenia and thrombocytopaenia
- Contraindication in pregnancy

Indications (@SEPTRAN D)

- **STD's** (Chancroid and LGV)
- **Enteritis** (E.coli, Shigella)
- **Pneumocystis jiroveci** infection
- **Typhoid** fever
- **Bacterial Respiratory** tract infections
- **Acute** uncomplicated lower urinary tract infection (UTIs)
- **Nocardia**
- **Bacterial diarrhoeas**

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