

## ANTIMICROBIALS

### SULPHONAMIDES & POTENTIATED SULPHONAMIDES

- ◆ Sulphadiazine
- ◆ Sulphamethoxole
- Trimethoprim
- Baquiloprim

## SULPHONAMIDES

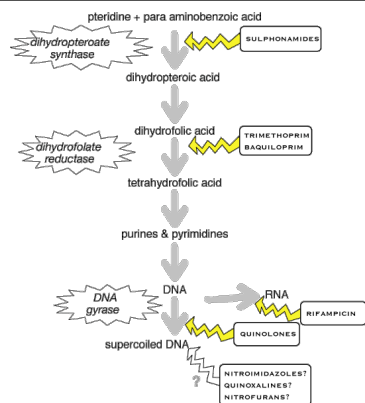
### Mechanism of Action

#### NUCLEIC ACID SYNTHESIS

Sulphonamides:

Competitive Inhibition

of PABA to dihydrofolic acid



## ANTIMICROBIALS

### SULPHONAMIDES

#### SULPHONAMIDES:

Bacteriostatic

INACTIVATED BY PUS AND  
NECROTIC TISSUE

## SPECTRUM OF ACTIVITY

### SULPHONAMIDES

#### SULPHONAMIDES:

Bacteriostatic:

some Gram +, -

coccidia, protozoa

Widespread Resistance & Cross R

## TOXICITY

### SULPHONAMIDES

Crystalluria (potential for renal tox)

Hypersensitivity reactions

Keratoconjunctivitis sicca (dry eye)

Immune mediated polyarthritis  
(large dog breeds)

**TOXICITY**  
**SULPHONAMIDES**

Vomiting

Drug induced fever

Vitamin K deficiency

Hypothyroidism

Cats salivate

**TOXICITY**  
**SULPHONAMIDES**

Blood dyscrasias:

bone marrow depression

leukopaenia, anaemia

thrombocytopenia

Monosodium salt injectables are  
corrosive and irritate tissues

**PHARMACOKINETICS**  
**SULPHONAMIDES**

Sulphonamides are weak acids

Absorbed well except for GIT sulphas

Distribution good (eye and CNS)

Hepatic Metabolism by acetylation

Elimination - tubular and glomerular  
filtration

## USES

### SULPHONAMIDES

Gastrointestinal disease/diarrhoea

calves, cats, dogs, sheep, goats,  
pigs, deer and horses

## DRUG INTERACTIONS

### SULPHONAMIDES

B Vitamins

Procaine

Highly Protein bound drugs, NSAIDs

Antacids if concurrent oral  
administration

## Mechanism of Action

### POTENTIATED SULPHONAMIDES

Trimethoprim and Baquiloprim

Aka Diaminopyrimidine analogues:

Inhibit dihydrofolate reductase:  
prevent the conversion of dihydrofolic  
acid to tetrahydrofolic acid

## SPECTRUM OF ACTIVITY

### POTENTIATED SULPHONAMIDES

**Trimethoprim and Baquiloprim**

Diaminopyrimidine analogues are:

Synergistic with sulphonamides

Bacteriocidal - broad spectrum  
(not *Pseudomonas*, anaerobes?)

## TOXICITY

### POTENTIATED SULPHONAMIDES

Blood dyscrasias

Hypersensitivities in large dog breeds

Vomiting, Anorexia, Diarrhoea

Fever, weakness, depression

Co-Trim (sulphamethoxazole)  
associated with hyperkalaemia

## TOXICITY

### POTENTIATED SULPHONAMIDES

Hepatotoxicity

Potentially fatal interaction with  
detomidine in the horse

## PHARMACOKINETICS

### POTENTIATED SULPHONAMIDES

Half-life varies with species

Use baquiloprim in cattle T<sub>1/2</sub> 10 hrs

## USES

### POTENTIATED SULPHONAMIDES

Frequent use for:

Osteomyelitis

Prostatitis

Respiratory tract infections

Staph pyoderma

## USES

### POTENTIATED SULPHONAMIDES

Frequent use for:

Urinary tract infections

Wounds

Footrot

Diarrhoea

Navel ill.....

## **SUMMARY**

### **POTENTIATED SULPHONAMIDES & SULPHONAMIDES**

- CHEAP \$\$
- BROAD SPECTRUM
- BACTERIOCIDAL IN COMBINATION
- ADVERSE REACTIONS
- NUMEROUS INDICATIONS