

Parasitic (Verminous) Pneumonia

- Effect on host
 - Obstruct airways
 - Granulomas, multifocal, caudo-dorsal
 - Necrosis leading to loss of function
 - Secondary bacterial bronchopneumonia
 - Hypersensitivity reaction
 - Often see eosinophils

Muellerius spp - Sheep



Toxic Lung Injury



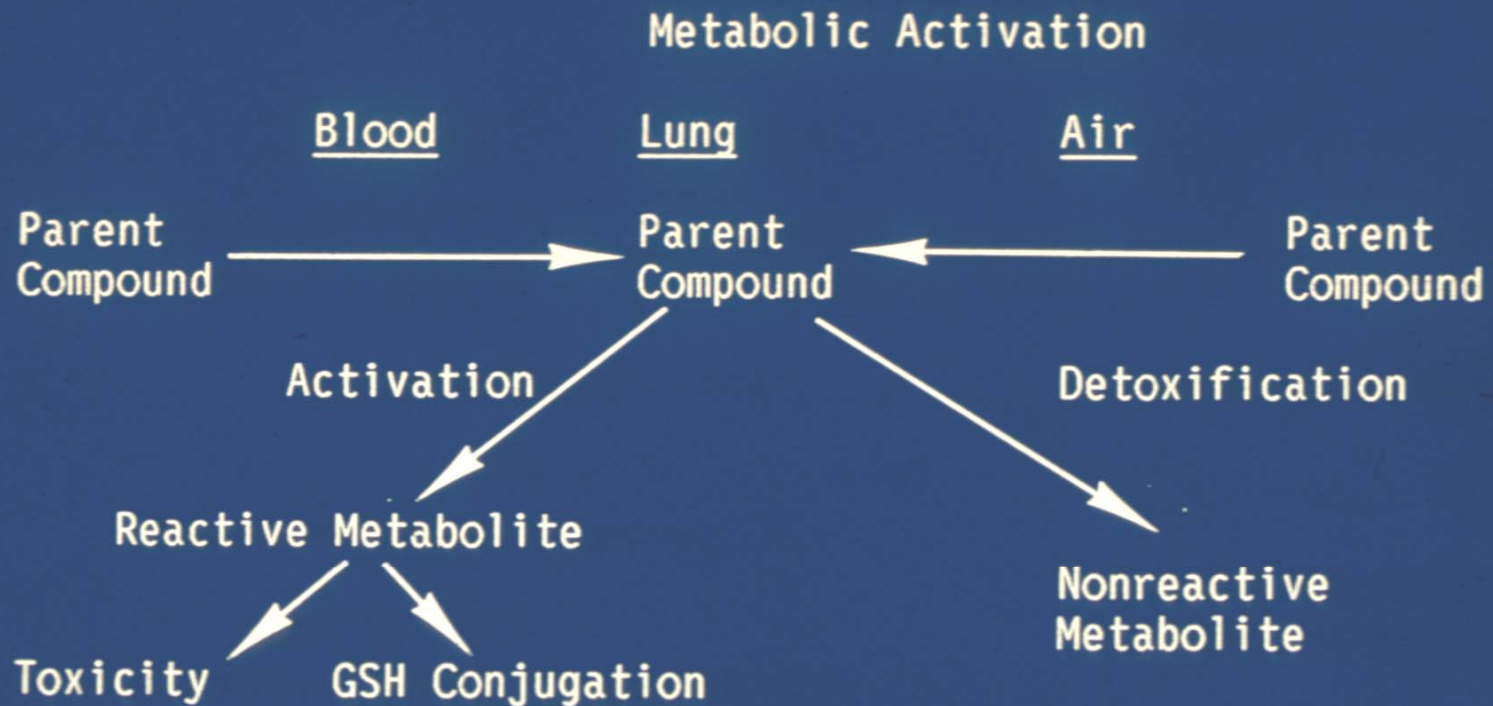
Cell Specific Toxic Injury

- Ciliated cells - NO_2 , SO_2 , O_3
- Mucous cells - smoking, SO_2
- Nonciliated (Clara) cells/olfactory epithelium - metabolically activated agents e.g. 3 methylindole
- Endothelial cells – pyrrolizidine alkaloids, oxygen, endotoxin
- Epithelial type I cells – paraquat
- Macrophages - silica

Mechanisms of Toxicity

- Direct acting e.g., oxygen (high conc)
- Indirect acting
 - Metabolic activation e.g., 3 methylindole
 - Cyclic oxidation of parent compound eg, paraquat
 - Immune mediated e.g., asthma
- Xenobiotic interaction e.g., with oxygen

Mechanisms of Toxicity



Chemically Induced (Toxic) Pulmonary Injury

- Etiology
 - 3-methylindole: cattle, sheep, goats
 - 4-ipomeanol: cattle
 - *Perilla frutescens* ketone: cattle, horses
 - Pyrrolizidine alkaloids: cattle, horses
swine, sheep (mainly hepatic)
 - Paraquat: dogs, cats, man
 - Chemotherapeutic agents e.g. bleomycin
- Pathology: interstitial pneumonia

Smoke Inhalation

- Injury due to
 - Thermal injury (URT)
 - Chemical injury (LRT)
- Lesions
 - Laryngeal/tracheal necrosis with fibrin
 - Delayed pulmonary edema
 - Soot particles often seen

Immune-Mediated Diseases

- Type I hypersensitivity: IgE mediated
 - Asthma or anaphylaxis
- Type III hypersensitivity : IgE mediated
 - Hypersensitivity “pneumonitis”
- Type IV hypersensitivity : cell mediated
 - Granulomatous disease

Anaphylaxis

- Species: cattle, horses, cats
- Type I hypersensitivity
- Etiology
 - Iatrogenic: antibiotic injection, vaccination
 - Ruptured liver abscess, etc
- Pathology
 - Pulmonary edema with eosinophils
 - Airway constriction