

Strychnine:

Is a potent and fast acting and wide spread cause of toxicosis .

Strychnine is bitter alkaloid extracted from the seeds of an indian tree called “Nux vomica “.The tissue of animal killed by strychnine.

The uses of strychnine is restricted in many states with relate laws against direct cell.

Strychnine was once use in oral preparation appetite enhancer .

Toxicity :-all species susceptible.

Approximal LD50 dose 0.5 mg /Kg .

Mechanism of toxicity :-

Strychnine act by selective reversible competitive antagonism of the inhibitory neurotransmitter glycine at post –synaptic neural site in spinal cord and medulla .

This drug is uncheck reflex stimulation with predominant of the more powerful extention lead to rigidity.

Toxicokinetic :-Absorption :-it is ionized in acid medium.

Metabolism:-

parent compound is in the liver with metabolize being extracted in urine .

highest concentration are in blood ,liver ,and kidney .Strychnine doesn't concentrated in the nervous tissue.at death the highest concentration is often in stomach content.

Clinical signs :-

onset of signs occur in 10- 20 min after ingestion.

1-Elevation blood pressure and heart rate along and it is Hypersensitivity to external stimulate are early signs .

2- clinical signs progress to violent tetanus seizer ,this tetanic seizure are interrupted by period of relaxation .

3-Rigidity of muscle inhibit respiration lead to apnea and anoxia which are the cause of death.

4-There is no running movement ,Mastication activity and salivation ,loss of conscious and vomiting .

5-Acidosis and hyperpyrexia ,myoglobin urea and renal failure may be seen .

Lesions:-

1-Rapid rigor followed by rapid relaxation .

2-Bossible signs of trauma due to seizure.

3-probable full stomach ,and rapidly death.

Diagnosis:

1-History of exposure .

2-Lab analysis of stomach content which may see red or green dark.

3-histopathology of liver ,histopathology of brain negative.

Treatment :-

1-If very soon after ingestion and no clinical signs are noted ,fast use emetic .

2-if clinical signs are present ,relaxation of the animal in order to prevent asphyxia .It is the primary goal ,also provide artificial respiration.

3-Pentobarbital to effect is drug of choice or relaxation.

4-Diazepam is increase GABA like inhibitory activity ,mimics Glycine and also displaced strychnine binding may be just useful in small animal.

4-Inhalation anesthesia can also use specially if maintenance .

5-Detoxication procedure can shorten duration and lesion severity of disease but should be instituted only after the animal is stabilized by :

A-intra gastric lavage by using potassium permanganate solution.

B-Activated charcoal and a saline or osmotic cathartic.

C-Fluids forced diuresis with 5%mannitol in 0.9% normal saline .

D-Ammonium chloride (100 ml /kg) to acidify urine therapy protonating strychnine to reduce its reabsorption across the tubular membrane may help elimination of strychnine.

E-correct hyperthermia .

F-Care taking to avoid stimulation and reflex rigidity when handling.