

3) Blood agents:

- * They're agents has a hematotoxic (cytotoxic effect).

Examples:

- * Cyanide (hydrocyanic acid & cyanogen chloride)
- * Death occurs within 6-8 min after inhalation of high conc.
- * Cyanide gas can absorbed through inhalation or in the liquid form can be swallowed accidentally or intentionally.
- * Absorption can be through skin can be extensive when the skin is abraded.
- * Cyanide rapidly combines with cytochrome oxidase complex → inhibition → prevent aerobic resp. → anaerobic metabolism → severe lactic acidosis.

Complications:-

- * Heart & CNS are the most susceptible organs.
- * 15 seconds after inhalation → tachypnea, N, V, headache
- * Cessation of resp. within 2-4 min
- * Cessation of heart beat within 4-8 min
- * Sign is bitter almond odor

Treatment:-

- * **First** → IV amyl nitrate which causes dissociation of bound cyanide from cytochrome A3 & frees the enzyme to produce ATP again → cyanomethemoglobin (non toxic).
- * Can be given as inhalation in first aid.
- * **Second** → Sodium thiosulfate, it converts cyanide to thiocyanate → renal exc.
- * **Cobalt** → * - available as dicobalt ededate
 - More effective than combination of sodium nitrite & sodium thiosulfate.
 - Should be diagnosed before using cobalt due to inherent toxicity of cobalt.