Hydrocarbons

Background

Scenarios tend to be either: accidental ingestion by child, recreational inhalation of volatile HC, accidental dermal/inhalation exposure, or massive ingestion OD.
Whether ingested or inhaled can cause rapid N&V, CNS depression, seizures and rarely dysrhythmias. Aspiration → cough, chemical pneumonitis. Ingestion of eucalyptus oil≥10ml (child 5ml) assoc with seizures/coma always within 2hr. Toluene renal toxic. CCl_4 renal & hepatic toxic.

Classification

Type	Examples	Comments
Aliphatic petroleum distillates	Methane, Propane, Butane, Gasoline, Kerosene, Mineral spirits, Mineral oil, Naphtha, Mineral seal oil, Diesel oil, n-Hexane	Asphyxiants → ↓PO2 & ↓CNS Pneumonitis if aspirated n-Hexane → peripheral neuropathy Mineral seal oil has high aspiration potential Poor GIT absorption Abused inhalants
Aromatic petroleum distillates	Toluene Xylene Benzene	Highly volatile, lung aspiration Absorbed from GIT Inhaled toluene → RTA Benzene → aplastic anaemia, leukaemia Abused inhalants
Wood distillates	Turpentine Pine oil	Well absorbed from GIT GI/CNS toxicity
Halogenated hydrocarbons	Methylene chloride Chloroform Carbon tetrachloride Trichloroethylene Freon Methylbromide Lindane DDT	Multisystem toxicity (CNS, renal, hepatic, cardiac) Highly lipid soluble Methylene chloride → CO CCl4 is radiopaque Insecticides absorbed through skin Inhalant abuse
Related chemicals	Phenol Creosols	Very corrosive Phenol causes severe skin burns

Toxicity

Dependent on volatility, viscosity, surface tension, and side chains.
Resp (bronchospasm, pneumonitis, hypoxia, inhibition of surfactant leading to alveolar dysfn, V/Q mismatch, ↓PaO_2, resp failure), CNS, CVS, other (bone marrow, liver, renal)

Clinical Features

Respiratory – wheeze, cough, dyspnoea. Cardiac – CVS collapse, early dysrhythmias, CNS – euphoria, ↓LOC, coma, seizures, GIT – Nausea, V&D

Investigations

Screening: Paracetamol, ECG
Other: ABG, CXR, UEC

Management

Decontamination: Remove clothes, wash skin with soap & water. GI generally CI (AC doesn't adsorb HC and ↑risk of aspiration). Controversially lavage may be considered in a few ingestions if particular life-threats: CHAMP (Camphor, Halogenated HC, Aromatic HC, Metals, Pesticides). Supportive therapy with attention to dysrhythmias, seizures & respiratory support.

Disposition

If asymptomatic for 6hrs & normal SaO_2, blood gases & CXR at the end of that period, then may be D/C, else admit.