

## Pharma alcohol

Individual with alcohol dependence exhibit: 1)tolerance 2)withdrawal signs and symptoms 3)inability to control drinking.

Uses: 1)local 2)to reduce body temperature 3)appetite stimulant 4)neuralgia for severe acute cancer pain (injection around the nerve) 5)anti-dot for methanol poisoning.

Physiological response to consumption:

1)Graded onset of disrupted motor function 2)decrement in skills and reaction to auditory and visual stimuli.

Effects of Alcohol:

CNS: depressant (GABA receptors, inhibition of NMDA, Stimulate 5HT<sub>3</sub>, nicotinic receptors, inhibit voltage Ca channels).

Analgesic, induce sleeping, anticonvulsant action but not perfect.

CVS depends on dose

Respiration ++

Blood: ↑ HDL and cholesterol+ ↓ LDL Oxidation

GIT: depends on dose

Kidney: diuresis ↑ water ingestion and — of ADH.

Endocrine: hypoglycemia (↑ dose) vice versa

### ■ Absorption:

first pass metabolism in stomach and liver.

Absorbed by skin and lungs.

### ■ Distribution:

Crosses placenta and BBB.

### ■ elimination:

Urine, exhaled air and Sweat through skin.

### ■ metabolism (98%):

Metabolized by hepatic alcohol dehydrogenase mainly and in small amounts by CYP2E1.

Treatment of Acute alcohol intoxication:

Gastric lavage, endotracheal intubation, fluid and electrolyte balance, glucose infusion, thiamin injection and haemodilysis.

Toxic effects of chronic alcoholism:

GIT: anemia, deficiency of water soluble vitamins.


Liver: glutathione depletion and microsomal enzyme induction.

Reproduction: teratogenic thus birth defects, fatal alcohol syndrome and Alcohol related birth defects.

Hormonal: impotence and infertility.

## Disulfiram:

Irreversible ALDH enzyme inhibitor.

Alcohol + disulfiram →  blood and tissue aldehyde concentration → distressing aldehyde syndrome.

USES: aversion technique for chronic alcoholics

## Summary

- ▶ Alcohol is a neuronal depressant
- ▶ Long term exposure to alcohol brings about adaptive changes in the neuronal system
- ▶ Chronic alcoholism causes toxic effects on all the organs especially liver
- ▶ Withdrawal syndrome in alcoholics are treated by BZDs and Naltrexone
- ▶ Antbuse/disulfiram is the drug is use as aversion technique in chronic alcoholics
- ▶ Ethanol is used as antidote in Methanol Poisoning