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Hepatoprotective Agents

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Hepatoprotective Agents

- N acetylcysteine
- Penicillamine
- Cardiotropin-1
- Anti-oxidants
 - Ascorbic Acid (Vit. C)
 - Melatonin



N acetylcysteine

- › N acetylcysteine has been used for several decades and has proven to be the anti-dote of choice in treating acetaminophen induced hepatotoxicity
- › It prevents hepatic injury primarily by restoring hepatic glutathione.
- › It may involve scavenging of free radicals or changes in hepatic blood flow.



Penicillamine

- › Penicillamine is a degradation product of Penicillin but has no Antimicrobial Activity
- › It form chelates with several metals including copper, lead, iron and mercury, forming stable water soluble complexes that excreted through renal route.
- › It may also have Anti-fibrotic effect as it inhibits lysyl oxidase, an enzyme necessary for collagen production.



Cardiotropin-1

- › Cardiotropin-1 is a member of the interleukin6 family of cytokines
- › CT-1 is upregulated during liver regeneration and exerts potent anti-apoptotic effect on hepato-cytic cells.
- › CT-1 is a hepatocyte survival factor that efficiently reduces Hepato-cellular damage.



Anti-oxidants

- › **Vitamin-C**
- › **Melatonin**



MOA of Anti-oxidants

- › The mechanism of free radical damage include ROS-induced peroxidation of poly-saturated fatty acid in the cell membrane bilayer, which causes a chain reaction of lipid peroxidation and causing further oxidation of membrane lipids and proteins
- › Subsequently cell content including DNA, RNA and other cellular components are damaged
- › Antioxidants prevent the transfer of electron from oxygen to organic molecules, stabilizing free radicals and terminates the free radical reactions.



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