Lead Antidotes

Lead interferes with a variety of processes in the body and is toxic to many organs and tissues, including the heart, bones, intestines, and kidneys, as well as the reproductive and nervous systems. Lead is particularly toxic to children due to its ability to interfere with the development of the nervous system and can lead to permanent learning and behavioral disorders. Common symptoms of lead toxicity include abdominal pain, confusion, anemia, irritability and can also lead to seizures, coma and death. Signs of chronic poisoning also include short-term memory loss, depression, loss of coordination, and numbness and tingling in the extremities. Other commonly associated signs include lead lines on the gingival border, wrist-drop, and growth arrest lines (lead lines) in bone. A common scenario leading to lead toxicity is the ingestion of lead paint that exists in older homes. Treatment of lead poisoning consists of separating the child from the exposure. Chelation is commonly used when separation fails to reduce lead levels sufficiently or when there are signs of lead encephalopathy. The criteria that should be met before beginning chelation therapy are based on blood lead levels (BLL). If the BLL is ? 45 ?g/dl in children, ? 80 ?g/dl in asymptomatic adults, and ? 50 ?g/dl in symptomatic adults, oral administration of succimer with or without CaNa2 EDTA is recommended. Patients with lead encephalopathy are treated with the combination of intramuscular dimercaprol and CaNa2 EDTA.



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Antidotes

Dimercaprol
Dime-cap
Dimercaprol, also known as BAL, is a heavy metal chelator. It is a bisulfide molecule and is a lipid-soluble drug that must be administered intramuscularly. This medication binds to heavy metals like lead and allow them to be excreted in the urine.

CaEDTA
ET-TA
Calcium disodium edetate is a chelator that may be used IM or IV in the treatment of lead toxicity.

Succimer
Sucker
Also known as dimercaptosuccinic acid, succimer is a compound that contains two carboxylic acid and two thiol groups that is used as a chelating agent commonly indicated for the treatment of lead poisoning.

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