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201. Chelation therapy by medical toxicologists in the U.S.

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Background: Chelation therapy remains a controversial treatment. While National Health Statistics (NHS) data (2008) reported 72,000 children (< 18 years) and 111,000 adults (> 18 years) were given chelating agents in 2007 the AAPCC National Poison Data System (NPDS) data showed that relatively few cases of chelation therapy are reported to a poison control center. In 2010 out of the 10,638 possible heavy metal exposure reported to the NPDS, only 358 (3.4%) were treated with chelating agents. It is unclear as to how often medical toxicologists actually prescribe chelation therapy. We investigated the Toxicologic investigators Consortium (ToxIC) Registry data of the American College of Medical Toxicologist (ACMT) to see the frequency and pattern of chelation therapy among medical toxicologists in the US.

Methods: ACMT maintains a registry of encounters seen by participating medical toxicologists at the bedside and in the clinic. A total of 34 centers throughout the U.S. regularly contribute data into the registry. Based on a 2009 survey of ACMT members who practice medical toxicology at the bedside, centers who participate in the Registry account for a majority of active medical toxicology practices. We queried the registry data for the frequency of toxic metal exposure and pattern of chelation therapy from January 1 st , 2010 to December 31 st , 2011 using search terms such as metals/ metalloids, individual metal name and chelating agents

Results: 10,414 encounters were reported in ToxIC during the 2 year period. 328/10,414 (3.1%) were for exposure to metals. Chelating agents were used in 31 cases, 25 of which were prescribed by medical toxicologists and 6 which presented after urine chelation challenge test by naturopaths or self-chelation. During the same period 3982/10,414 (39%) received other antidotes. Chelators represent only 25/4007 (0.6%) of all antidotes used by medical toxicologists. A chelating agent was prescribed in 25 (7.6%) of the 328 metal exposures; 18 children and 7 adults Dimercaptosuccinic acid (DMSA) was used in 18 cases, 15 of these were for lead, one was for arsenic, one for mercury and one for an unknown metal. Ethylenediaminetetraacetic acid (EDTA) was used in 5 cases, all for the treatment of lead poisoning. Deferoxamine was used in 4 cases, 2 for iron, one for aluminum and one for sucralfate. British anti Lewisite was used once to treat lead encephalopathy in combination with EDTA.

Conclusions: Medical toxicologists rarely prescribe chelation therapy. This is consistent with uncommon use of chelating agent reported to the NPDS. Medical Toxicologist's prescribing of chelating agents likely accounts for a tiny proportion (<<1%) of all use of chelating agents as reported in the NHS data.