

## Alarming use of chelation therapy.

**Guido CRISPONI,**<sup>a)</sup> **Valeria M. NURCHI,**<sup>a)</sup> **Joanna I. LACHOWICZ,**<sup>a)</sup> **Miriam CRESPO-ALONSO,**<sup>a)</sup> **M. Antonietta ZORODDU,**<sup>b)</sup> **Massimiliano PEANA**<sup>b)</sup>

<sup>a)</sup> *Dipartimento di Scienze Chimiche e Geologiche, University of Cagliari, Cittadella Universitaria, 09042 Monserrato-Cagliari, Italy,* <sup>b)</sup> *Dipartimento di Chimica e Farmacia, University of Sassari, Via Vienna 2, 07100, Sassari, Italy; crisponi@unica.it*

Chelation therapy is a consolidated medical procedure used primarily to hinder the effects of toxic metal ions on human tissues [1]. Its application spans a broad spectrum of disorders, ranging from acute metal intoxication to genetic metal-overload. The use of chelating agents is compromised by a number of serious side effects, mainly attributable to perturbed equilibrium of essential metal ion homeostasis and dislocation of complexed metal ions to dangerous body sites. For this reason, chelation therapy has been limited to specific critical and otherwise untreatable conditions and needs to be monitored within an appropriate clinical context [2-3]. An alarming issue today is that fraudsters use the term “chelation therapy” to take advantage of and make profit from people with tragic health problems. We believe that scientists working in this field have the corollary obligation to deter these frauds and to inform the scientific community of the possible side effects and complications of chelation therapy. This duty is all the more important if we consider the detrimental and even life threatening consequences that can occur in subjects with no clear clinical and laboratory evidence of metal intoxication. The aim of this communication is to present how this “false chelation therapy” developed and in which diseases it is currently applied [4].

### References:

- [1] Crisponi, G.; Nurchi, V. M.; Crespo-Alonso, M.; Toso, L., Chelating Agents for Metal Intoxication. *Current Medicinal Chemistry* **2012**, 19, 2794-2815.
- [2] Crisponi, G.; Nurchi, V. M.; Fanni, D.; Gerosa, C.; Nemolato, S.; Faa, G., Copper-related diseases: from chemistry to molecular pathology. *Coord. Chem. Rev.* **2010**, 254, 876-889.
- [3] Crisponi, G.; Remelli, M., Iron chelating agents for the treatment of iron overload. *Coord. Chem. Rev.* **2008**, 252, 1225-1240.
- [4] Crisponi, G.; Nurchi, V. M.; Lachowicz, I. J.; Crespo-Alonso, M.; Zoroddu, M. A.; Peana, M., Kill or Cure: Misuse of chelation therapy for human diseases. *Coord. Chem. Rev.* **2014**, accepted for publication.