

## Oral Presentation - 37

## Success of Intravenous Lipid Therapy for Lipid Soluble Drug Poisoning Can Be Further Emphasized Through the Lipid Soluble Organophosphate Poisoning

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### Abstract

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**Objectives:** The aim of this study was to review the evidence systematically and justify human trials of intravenous lipid therapy (ILT) for organophosphate poisoning (OP) in Sri Lanka.

**Method:** A systematic literature review using a personal research literature collection, MEDLINE 1998-2013 and citations from references a systematic literature review was carried out. In addition, the Guidelines of the American Society of Regional Anesthesia for the use of lipid emulsion in resuscitation were used as reference.

**Results:** Forty-five articles including 38 case reports on ILT in drug overdose were published in peer reviewed journals. Evidences from these were strong enough to justify inclusion of this therapy in several guidelines on resuscitation. ILT was used to reverse the cardio toxicity in 34 cases, nervous system toxicity in 7 cases and both in 3 cases. Only one case described reduced insulin resistance in diltiazem poisoning. Some toxicology experts do not completely agree because of the lack of clinical research evidence. They suggested randomized control trials are needed. Fifty-two studies on OP poisoning in relation to Sri Lanka were found including several clinical trials. Studies indicate OP poisoning as an important health issue in Sri Lanka because of deliberate self-ingestion of pesticides. Management of OP poisoning is complicated by the lack of evidence from clinical trials to guide treatment, with no clear benefit noted from any therapy other than oxygen, atropine, and diazepam. Current treatment is only partially effective, with fatality cases often greater than 15%-30% in even the best intensive care units. New agents tried (e.g. MgSO<sub>4</sub>) very recently were reported to be well tolerated by the patients (phase II study). Lipid solubility was discussed in some articles which varied by the brand of OP. Chlopyrifos is a widely used OP in Sri Lanka and it is highly lipid soluble with a fat solubility of 5.05 (Value 1.0 indicates water-soluble compound and Value 4.0 indicates a very fat-soluble compound).

**Conclusions:** Difficulty in arranging randomized control trials is the main issue in collecting evidence on treatment methods for anesthetic drug overdose in clinical settings. On the other hand, patients with OP poisoning seem to be good candidates for ILT. Clinical trials on OP poisoning can be easily implemented in Sri Lanka, paving the way for the future use of ILT.