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Letter to the Editor

Lipid emulsion in acute poisonings: still no convincing demonstration for its use in non-local anesthetic drug poisoning without life-threatening presentation

We read with interest the article reporting Glasgow coma score (GCS) improvement in poisonings six hours after presentation, when using lipid emulsion (LE)[1]. The authors should be congratulated for this randomized investigation. However, we wish to comment on their findings.

If considered as "antidote" for non-local aesthetic drug poisoning lacking cardiovascular impairment, LE should be a drug whose mechanisms of action have been determined, which is able to modify either poison's toxicokinetics or toxicodynamics and whose administration reliably induces significant benefits[2].

LE most reliable mechanism of action, called "lipid sink"[3], is causing drugs with high lipid solubility to be absorbed out of the serum, away from targets while possibly enhancing excretion. Guidelines stated that clinicians should consider using LE for overdoses involving drugs with high-degree of lipid solubility[4]. LE extraction efficiency is dependent upon the drug's lipid partition constant.[5] Efficacy in reversing cardiac toxicity is optimally predicted when combining lipid partition constant and distribution volume[5]. Thus, infusing LE in comatose patients by relying on drug's presumable lipid solubility since responsible for coma, may be unsuccessful, with possible risks. LE provides safe and non-specific alternative only to life-threatening poisonings refractory to supportive treatments and conventional antidotes.

Limited GCS improvement was observed between treated patients and controls (3 ± 1 versus 2 ± 2, respectively). This difference, although significant, is not clinically pertinent as not resulting in reduced intubation duration, even though the study was underpowered to assess such an endpoint. Moreover, anesthesia used to intubate has not been compared and may account for a confounding factor.

LE should be administered with cautions. No indication exists, if improving GCS is only expected, in contrast to naloxone and flumazenil which may avoid intubation[6,7]. This study with a rather good level of evidence, demonstrates the absence of LE benefit in multi-drug poisonings with no other impairments than coma.

References

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*B. Megarbane, F. Jacobs**

Medical and Toxicological Intensive Care Unit, Lariboisière Hospital, Paris-Diderot University, Paris (France)
*Medical Intensive Care Unit, Antoine Béclère Hospital, Paris-Sud University, Clamart (France)

Corresponding Author: Bruno Mégarbane, MD, Ph.D; e-mail: bruno-megarbane@wanadoo.fr