Oral Presentation – 03

Is Oxygen Required Before Atropine Administration in Organophosphorus or Carbamate Pesticide Poisoning? A Literature Review and Cohort Study

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Abstract

Objectives: Early and adequate atropine administration in organophosphorus (OP) or carbamate insecticide poisoning improves outcome. However, some authors advise that oxygen must be given before atropine due to the risk of it inducing ventricular dysrhythmias in hypoxic patients. Since oxygen is frequently unavailable in district hospitals of rural Asia where most patients present, this guidance has significant implications for patient care. We performed a literature review and patient cohort analysis to assess the evidence for this advice.

Methods: We searched the literature for articles and reviews requiring administration of oxygen before atropine and assessed the quality of evidence cited. We also analysed a prospective Sri Lankan cohort of OP or carbamate poisoned patients treated with early atropine without the benefit of oxygen for evidence of early deaths.

Results: We found twenty nine publications stating that oxygen should be given prior to atropine due to the risk of ventricular dysrhythmias. The majority (17.59%) provided no evidence for this statement; only one cited a relevant report - a case report of a single patient. In the cohort study, four (0.2%) out of 1,957 patients died from a primary cardiac arrest within the first three hours after atropine administration on admission.

Conclusions: We found no evidence in the literature, and no evidence of frequent early deaths in an observational study of 1,957 patients, to support the advice that oxygen must be given before atropine. Early administration of atropine during resuscitation is life-saving. Early and rapid atropinisation of OP and carbamate poisoned patients should be done, whether oxygen is available or not.