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Diphoterine solution decontamination of eye/skin chemical exposures: Review and update on recent data

Introduction: Diphoterine is an amphoteric, slightly hypertonic, polyvalent, sterile water-based eye/skin decontamination solution which combines passive flushing with active chemical decontamination. Reviews were published in French (Minaro et al, 2000) and Hall et al (2002). Since that time, many more studies of Diphoterine safety and efficacy, both pre-clinical and clinical, have been performed. This review describes earlier studies and details more current ones. Some of these were described in reviews at the Medichem Conference, Basel, Switzerland, 2016, at the AMPAT Congress, Singapore, 2016, and the AOHC Congress, Kaohsiung, Taiwan. Presented here are new not previously presented data.

Materials and Methods: A review of all new data since previous presentations was performed.

Results: Non-Clinical: In vitro/ex vivo comparative decontamination studies with phenol (acid) and tetraammonium hydroxide (TMAH) (base) have been performed. In both cases, Diphoterine solution decontamination was superior to water decontamination. Clinical studies have included a 20-year chemically exposed eye study from Germany in which Diphoterine solution was found better than any other rinsing solution.

A multi-center, multinational clinical study from France and Belgium showed the efficacy of Diphoterine solution for decontamination of chemically exposed skin, eyes, and oral membranes in the pre-hospital and emergency department settings. Similar results were found in a clinical study of occupational phenol exposure outcomes in Taiwan and exposure to various various caustic substances in India.

Conclusion: Based on previously published/presented data and data presented here, Diphoterine solution is a better choice than potable water or other rinsing solutions for first aid, pre-hospital, and emergency department (even if delayed) decontamination of chemical eye/skin exposures.

Biography

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