

Abstract

Background: The practice of general anaesthesia and endotracheal intubation is a fundamental tool in the armamentarium of every anaesthetist, however this skill is not without its own complications. One of these complications is the sympathoadrenal response to this process which can lead to an increased risk of peri-operative myocardial infarction, cerebrovascular accidents and pulmonary oedema which directly impacts morbidity and mortality. This is of particular concern in patients who are hypertensive as they experience far greater surges in blood pressure and heart; these patients make up a large subset of our elective surgery case load. None of the previously attempted methods for attenuation of the cardiovascular response to intubation get to the root of the problem which is the release of norepinephrine and epinephrine which is responsible for this sympathoadrenal response. Magnesium sulphate seems to be the answer to this as it directly inhibits the release of norepinephrine and epinephrine.

Methods: In a double blinded, randomized clinical trial which enrolled 132 ASA I and II aged 18-65 years patients, randomized via the lottery method to two groups. Group 1 was given magnesium sulphate 40 mg/kg and Group 2 received 60mls of normal saline. The systolic, diastolic and mean arterial blood pressure and pulse rate were recorded every minute for fifteen minutes post administration of the “test drug.” The induction of anaesthesia was standardized for all groups; they received Morphine 0.1mg/kg, Propofol 2mg/kg and Cisatracurium 0.2 mg/kg. The need for reversal of non-depolarizing muscle relaxants was also assessed. Statistical analysis was done using the t- test, Chi- squared test, Pearson correlation and ANOVA.

Results: There was no statistical difference seen between the magnesium and placebo groups for the systolic, diastolic and mean arterial blood pressure or heart rate seen. There was no increase in the need for reversal of muscle relaxants with the magnesium group.

Conclusion: It was concluded that magnesium sulphate 40mg/kg was not successful in attenuating the cardiovascular response to endotracheal intubation when compared to placebo.

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Done under the Supervision of:

Dr Alan Barnett MB BS, FRCA

Lecturer & Consultant

Section of Anaesthesia and Intensive Care

University of the West Indies (UWI), Mona

Dr Ingrid Tennant MB BS, DM (UWI)

Lecturer & Consultant

Section of Anaesthesia & Intensive Care

UWI, Mona

Dr Hyacinth Harding MB BS, DM (UWI)

Senior Lecturer & Programme Coordinator

Section of Anaesthesia & Intensive Care

UWI, Mona

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