

Cover Page

Title: A Prospective Study of Evaluation of Operative Duration as a Predictor of Mortality in Pediatric Emergency Surgery: Concept of 100 Minutes Laparotomy in Resource-limited Setting

NCT Identifier Number: Not assigned

Document Date: 31/03/2017

Aims & Objectives

The primary objectives of our study were to quantify the effect of duration of emergency laparotomy in children on mortality and to identify a rough cut-off duration of laparotomy to serve as a guide so that such a laparotomy can be planned to optimize pediatric surgical patient outcome in terms of decreased mortality.

The secondary objectives included identifying factors that increase the time of emergency laparotomy and identifying measures that could be applied to reduce the time of laparotomy significantly and improve outcome.

Materials & Methods

This is a prospective study which was conducted at a government teaching institution over a period of 24 months. Ethical approval was provided by the Ethical Committee of the University and was conducted in accordance with guidelines of Good Clinical Practice and the Declaration of Helsinki. Written informed consent was taken from all patients.

All pediatric patients in the age group of 5 to 10 years presenting with acute abdomen diagnosed clinically and radiologically to be having a diagnosis of secondary peritonitis and obstruction; who were adequately resuscitated (with a minimum resuscitation period of at least 1 hour) pre-operatively and underwent definitive surgery by a single surgeon (pediatric surgery senior resident) in the emergency were included in the study. Also, only those patients who had a PRISM-III (Pediatric Risk of Mortality III) score (Figure 1) of ≤ 8 at presentation were included to avoid the confounding effect of pre-operative variables that might affect mortality. All patients were adequately resuscitated in terms of temperature, central nervous system (Glasgow Coma Scale, pupillary reflexes), cardiovascular system (systolic blood pressure, heart rate) and respiratory system (oxygen saturation $> 95\%$, $p\text{CO}_2$, pH, PaO_2) parameters so that they were brought within 0 score range of PRISM-III score at the end of resuscitation and before shifting to the operation theatre. Furthermore for inclusion only those pediatric patients were considered who presented within 72 hours of initial onset of symptoms, operated within 24 hours of initial presentation and who died in index hospital admission within 30 days.

Patients who underwent damage control surgery, whose PRISM – III score was >9 at any point of time before undergoing laparotomy or inability to achieve adequate resuscitation (PRISM-III score >0 before shifting to operation theatre) and/or requirement of resuscitation beyond 4 hours of presentation were excluded from the study.

All the patients were shifted to pediatric intensive care unit (PICU) after the operation where dedicated staff and pediatrician were available for monitoring of patient.