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**EFFECT OF RINGER'S LACTATE ON MATERNAL AND
NEONATAL PH IN CAESAREAN SECTION AT MULAGO
HOSPITAL, A RANDOMIZED TRIAL**

BY

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**A DISSERTATION SUBMITTED TO THE DIRECTORATE OF
RESEARCH AND GRADUATE TRAINING IN PARTIAL
FULFILMENT OF THE AWARD OF THE DEGREE OF
ANAESTHESIOLOGY OF MAKERERE UNIVERSITY**

JULY 2012

ABSTRACT

Objective: To compare the effect on mean maternal and neonatal pH, and 24-hour postoperative morbidity, following intraoperative RL vs. NS in caesarean section at Mulago Hospital.

Design: A parallel double blind randomized controlled trial, performed in Mulago Hospital Labour Ward and Gynaecology operating theatres on parturients scheduled for either elective or emergency caesarean section under spinal anaesthesia from September 2011 to April 2012 who consented. 500 parturients were randomly assigned to either RL or NS as sole intraoperative fluid, with 252 in NS and 248 in RL (90% power, $P < 0.05$).

Methodology: Preoperative and postoperative venous blood samples were drawn for venous blood gases. Placental umbilical arterial cord blood was drawn for neonatal blood gases. Mothers were followed up for 24 hours for incidence of postoperative morbidity. Data was entered with EpiData 2.1b and analysed using intention-to-treat analysis with Stata 10; t-test was used for means, chi squared for proportions and poisson regression for rates.

Results: A significant proportion of mothers in NS presented with hyperchloraemic metabolic acidosis preoperatively. This proportion increased postoperatively and was of statistical significance. Controlling for preoperative acidosis, there was only an 8% increase in postoperative hyperchloraemic metabolic acidosis in NS as compared to RL (IRR 1.08, 95% CI 0.93-1.24, $p=0.308$). A statistically significant number of acidotic babies were born to mothers with postoperative acidosis and had low APGAR scores at five minutes (more in NS). 28% of the 500 mothers had preoperative hypoglycaemia and 82% of these mothers delivered hypoglycaemic babies (54% of all babies delivered, blood glucose $< 4\text{mmol/l}$; 9.2% had glucose $< 2.5\text{mmol/l}$).

Recommendations: We recommend Ringer's Lactate as a safer fluid for perioperative fluid therapy and that perioperative glucose administration should be considered as part of the protocol for perioperative management of caesarean section in Mulago hospital.

ClinicalTrials.gov registration number NCT01585740