EFFECT OF COLLOID ON ACID-BASE BALANCE DURING COLORECTAL SURGERY

BALANCED (TETRASPAN®) VERSUS NON BALANCED (VENOFUNDIN®) HYDROXYETHYL STARCH

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NUR FARIZA RAMLY

IIUM Press
Gombak • 2017

First Print, 2017
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(Malaysian Scholarly Publishing Council)

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Perpustakaan Negara Malaysia Cataloguing-in-Publication Data

ISBN 978-967-418-715-6

Published & Printed in Malaysia by
IIUM Press
International Islamic University Malaysia
P.O. Box 10, 50728 Kuala Lumpur, Malaysia

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PREFACE

This prospective, randomized, controlled study was carried out to compare the usage of balanced and non balanced hydroxyethyl starch during elective colorectal surgery in term of changes in acid-base balance and renal profile in the immediate and early postoperative period. Thirty informed, consented, adult patients with ASA I-II, undergoing open colorectal surgery with duration of more than three hours were recruited after excluding those with significant cardiac, liver or renal diseases, and those with allergy to the starches. These patients were randomly allocated into two study groups. The Balanced group received an intraoperative fluid regimen that consisted of Hartmann's solution and balanced 6% hydroxytehyl starch (Tetraspan®). The Non Balanced group were given Hartmann's solution and saline-based 6% hydroxyethyl starch (Venofundin®). Patients were kept hemodynamically stable and normovolumia throughout the operation by giving boluses of the study fluids as volume replacement therapy. Biochemical indices for acid base balance and renal profile were reviewed at two endpoints: immediately post operation (at 1-hour) and early post operation (at 6-hour). There were no difference at immediate and early post operation respectively, noted in term of base excess ($p = 0.733$, $p = 0.507$) , chloride ($p = 0.483$, $p = 0.401$), lactate ($p = 0.477$, $p = 0.993$), urea ($p = 0.244$, $p = 0.190$) and creatinine ($p = 0.578$, $p = 0.323$) between both groups.

ACKNOWLEDGEMENTS

Alhamdulillah, all praises to Allah for His blessings, and for giving me the strengths in completing this dissertation. Special upmost appreciation goes to my supervisor, Prof Dr Jaafar Md Zain, Consultant Anaesthesiologist and Lecturer, Department of Anaesthesia and Intensive Care, Universiti Kebangsaan Malaysia Medical Center (UKMMC) for his supervision and constant support. Without his persistent invaluable help, this dissertation would not have been successful.

I am indebted to Assoc. Prof Dr Datin Norsidah Abd Manap, Consultant Anaesthesiologist and Head of Department of Anaesthesiology and Intensive Care, UKMMC and Prof Dr Lee Choon Yee, Consultant Anaesthesiologist and Lecturer, Department of Anaesthesia and Intensive Care, UKMMC for the priceless guidance extended to me.

I am thanking Assoc.Prof. Dato' Dr Mohd Basri Mat Nor, Head of Research of Kulliyyah of Medicine for giving me the opportunity and guidance in the field of research. Also, I would like to extend my heartfelt gratitude towards my dedicated lecturers and colleagues who involved directly throughout my dissertation. Your cooperation and precious times spent to assist me with this dissertation are very much appreciated.

Last but not least, my deepest appreciation goes to my beloved parents, husband and children, for their endless love, understandings, prayers and encouragements.

To those who indirectly contributed to this research, your kindness really means a lot to me.

Thank you very much.

NUR FARIZA RAMLY

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ABBREVIATIONS

^{o}C	Degree Celcius
µmol	Micromol
ASA	American Society of Anaesthesiologist
ANOVA	Analysis of variance
BP	Blood pressure
CVP	Central venous pressure
ERAS	Enhanced recovery after surgery
g	Gram
HES	Hydroxylethyl starch
HR	Heart rate
IV	Intravenous
kg	Kilogram
L	Litre
MAP	Mean arterial pressure
mcg	Microgram
mcgmol	Micromol
mL	Millilitre
mmHg	Millimetre mercury
mmol	Millimol
NIBP	Non invasive blood pressure
PCAM	Patient controlled analgesia morphine
SBP	Systolic blood pressure
UKMMC	Universiti Kebangsaan Malaysia Medical Centre