
AKNOWLEDGEMENT

At the beginning, I would like to confess favor and thanks to **God** who granted me the power, patience and reconciliation at all time, without his great blessing I would never accomplish this work.

*I am profoundly grateful to **Prof. Ahmed Mohamed ELAttar** Professor of Anaesthesia and Surgical Intensive Care, Faculty of Medicine, Alexandria University and **Prof. Khaled Ahmed Yassen** Professor and Chairman of Anaesthesia Department, National Liver Institute, Menoufiya University, for their useful advice and continuous guidance throughout the study.*

No word could express my feeling of gratitude and respect to **Dr. Ragab Saad Beltagy**, lecturer of Anaesthesia and Surgical Intensive Care Faculty of Medicine, Alexandria University for his useful advice, marvelous efforts and help during this study.

I would like to express my sincere gratitude and appreciation to **Dr. Mohamed Hussein Abdulla**, Lecturer of Anaesthesia, National Liver Institute, Menoufiya University and **Dr. Fatma Mahmoud** Lecturer of Anaesthesia, National Liver Institute, Menoufiya University, for valuable assistance and advice during the study.

My deep appreciation to **Dr. Wesam Saber** Lecturer of Public Health National Liver Institute, Menoufiya University for her kind advice in conducting the statistics of the study and **Dr. El Sayed Amr** for his kind advice in statistics and thesis printing. My deep appreciation to **Dr. Hatem Atteya**, Lecturer of Clinical Pathology National Liver Institute, Menoufiya University for his kind advice in conducting the laboratory work of this study.

Finally I would like to thanks **all the patients** who participated in the study.

CONTENTS

Chapter	Page
ACKNOWLEDGMENT.....	i
LIST OF CONTENT	ii
LIST OF TABLES	iii
LIST OF FIGURES	iv
LIST OF ABBREVIATIONS.....	vi
I. INTRODUCTION.....	1
II. AIM OF THE WORK	29
III. PATIENTS AND METHODS	30
IV. RESULTS	41
V. DISCUSSION	114
VI. SUMMARY	119
VII. CONCLUSIONS	120
VIII. RECOMMENDATIONS.....	121
IX. REFERENCES.....	122
X. PROTOCOL	
IX. ARABIC SUMMARY	

LIST OF TABLES

Table	Page
Table(1) Child Turcotte Pough classification	10
Table(2) Physical characteristics of Desflurane	17
Table(3) Demographic data and patient characteristics.	47
Table(4) Surgical and anaesthesia data	48
Table(5) Differences between groups regarding HR	49
Table(6) Differences between groups regarding MABP	52
Table(7) Differences between groups regarding CVP	55
Table(8) Differences between groups regarding COP	58
Table(9) Differences between groups regarding SV	61
Table(10) Differences between groups regarding SVR.....	64
Table(11) Differences between groups regarding TED FTc	67
Table(12) Laboratory investigations.....	70
Table(13) Differences between groups regarding T bilirubin	87
Table(14) Differences between groups regarding S . Albumin	90
Table(15) Differences between groups regarding Serum electrolytes	93
Table(16) Differences between groups regarding fluids intake and UOP	98
Table(17) Differences between groups regarding ext time,ICU stay and hosp stay	103
Table(18) Differences between groups regarding anaesth time and cost	107
Table(19) Differences between groups regarding Fentanyl intake	110

LIST OF FIGURES

Figure		Page
Figure (1)	Liver Anatomy	2
Figure(2)	Liver function tests	14
Figure(3)	Chemical formula of Desflurane	15
Figure(4)	Chemical formula of Propofol	23
Figure(5)	Chemical formula of Fentanyl	23
Figure(6)	Cardio Q monitor and esophageal probe	27
Figure(7)	Esophageal Doppler probe and waveform.....	28
Figure(8)	Box and Whisker plot of HR both groups	50-51
Figure(9)	Box and Whisker plot of MABP both groups.....	53-54
Figure(10)	Box and Whisker plot of CVP both groups	56-57
Figure(11)	Box and Whisker plot of COP both groups	59-60
Figure(12)	Box and Whisker plot of SV both groups.....	62-63
Figure(13)	Box and Whisker plot of SVR both groups	65-66
Figure(14)	Box and Whisker plot of TED FTc both groups.....	68-69
Figure(15)	Box and Whisker plot of AST both groups	71-72
Figure(16)	Box and Whisker plot of ALT both groups	73-74
Figure(17)	Box and Whisker plot of PT% both groups	75-76
Figure(18)	Box and Whisker plot of INRboth groups	77-78
Figure(19)	Box and Whisker plot of GST both groups	79-80
Figure(20)	Box and Whisker plot of Urea both groups	81-82
Figure(21)	Box and Whisker plot of Creatinine both groups	83-84
Figure(22)	Box and Whisker plot of microalbumin both group	85-86
Figure(23)	Box and Whisker plot of T Bilirubin both groups	88-89
Figure(24)	Box and Whisker plot of S. albumin both groups	91-92
Figure(25)	Box and Whisker plot of Sodium both groups	94-95
Figure(26)	Box and Whisker plot of Potassium both groups	96-97

Figure(27)	Box and Whisker plot of Crystalloids both groups	99-100
Figure(28)	Box and Whisker plot of UOP both groups	101-102
Figure(29)	Mean value of Extubation time both groups	104
Figure(30)	Mean value of ICU stay both groups	105
Figure(31)	Mean value of hospital stay both groups	106
Figure(32)	Mean value of anaesth. cost Egypt. Pounds both groups	108
Figure(33)	Mean value of anaesth. cost US Dollars both groups.....	109
Figure(34)	Mean value of Fentanyl intake both groups	111
Figure(35)	Mean value of blood loss both groups	112
Figure(36)	Mean value of modified Aldrete score both groups	113

LIST OF ABBREVIATIONS

ACT	:	Activated clotting time.
ALT	:	Alanine transferase.
aPTT	:	Activated partial thromboplastin time.
AST	:	Aspartate transferase.
BT	:	Bleeding time.
CDNB	:	1-chloro2,4-dinitrobenzene.
COP	:	Cardiac output.
Cr	:	Creatinine.
CTP	:	Chid –Turcotte-Pugh.
CVP	:	Central venous pressure.
Des	:	Desflurane.
ECG	:	Electrocardiography
ELISA	:	Enzyme linked immunosorbent assay.
ETco2	:	End tidal carbon dioxide.
FTc	:	Corrected flow time.
GE	:	General Electric.
GGT	:	Gama glutamyl transferase.
GST	:	Glutathion S transferase.
HCC	:	Hepatocellular carcinoma.
HCV	:	Hepatitis C virus.
HES	:	Hydroxy ethyl starch.
Hg	:	Mercury.
HR	:	Heart rate.
ICU	:	Intensive care unit.
INR	:	International normalized ratio.
KDA	:	Kilodalton.

LAP	:	Left atrial pressure.
LFT	:	Liver function test.
LVETc	:	Corrected left ventricular ejection time.
MABP	:	Mean arterial blood pressure.
MAC	:	Minimum alveolar concentration.
MELD	:	Model for end liver disease.
MHZ	:	Megahertz.
NonSe-GPx	:	Non selenium glutathione peroxidase activity.
OR	:	Operation room.
PaCO₂	:	Arterial carbon dioxide tension.
PACTR	:	Pan African Clinical Trial Registry.
PaO₂	:	Arterial oxygen tension.
PAP	:	Pulmonary artery pressure.
PK/PD	:	Pharmacokinetic/ pharmacodynamic model.
POD1	:	Post operative day 1.
PRP	:	Platelet rich plasma.
PT	:	Prothrombin ratio.
RBC	:	Red blood cell.
ROTEM	:	Rotational thromboelastometry.
SV	:	Stroke volume.
SVR	:	Systemic vascular resistance.
TCI	:	Target controlled infusion.
TED	:	Transesophageal Doppler.
TEG	:	Thromboelastography.
TFA	:	Trifluoroacetate.
TIVA	:	Total intravenous anaesthesia.
UOP	:	Urine output.
WHO	:	World health organization.