

Table of Contents

COVER.....	i
OBLIGATION FORM.....	iii
TEAM EXAMINER APPROVAL FORM.....	iv
SURAT ORISINALITAS	v
ACKNOWLEDGEMENT	vi
SUMMARY	viii
ABSTRACT.....	xi
TABLE OF CONTENTS.....	xii
LIST OF FIGURES	xv
LIST OF TABLE	xvi
LIST OF ATTACHMENT	xvii
LIST OF ABBREVIATIONS.....	xviii
CHAPTER 1 INTRODUCTION	1
1.1 Background	1
1.2 Research Questions.....	3
1.3 Research Objectives.....	3
1.4 Research Benefits.....	3
1.5 Research Risk.....	4
CHAPTER 2 LITERATURE REVIEW	5
2.1 Alcohol and cukrik	5
2.1.1 definition and clasification.....	5
2.1.2 Ethanol	6
2.1.3 Methanol	9
2.2 Kidney.....	11
2.2.1 Anatomy.....	11
2.2.2 Histology.....	14
2.2.3 Physiology.....	17
2.3 Acute Kidney Injury	19
2.3.1 definition.....	19
2.3.2 pathophysiology	22
2.4 Formaldehyde	24

2.5 Reactive Oxidative Species	24
2.6 Caspase	24
CHAPTER 3 CONCEPTUAL FRAMEWORK AND HYPOTHESIS.....	27
3.1 Conceptual Framework.....	28
3.1.1 explanation.....	29
3.2 Hypothesis.....	30
CHAPTER 4 METHODS	30
4.1 Research Design.....	31
4.2 Research flow.....	32
4.3 Population and sample	33
4.3.1 Population	33
4.3.2 Unit experiment	33
4.3.3 Sample technique	33
4.3.4 Sample criteria	34
4.4 Research variable	34
4.4.1 Research variable	34
4.4.2 Definition operational	35
4.5 Research Material	36
4.6 Research Instrument.....	36
4.7 Location and Time of Research	36
4.8.2 stage of termination.....	38
4.8.3 stage of making slide	38
4.8.4 observation stage.....	39
4.8.5 data analysis	40
CHAPTER 5 RESULTS AND RESEARCH ANALYSIS.....	41
5.1 Kidney glomerular histopathology examination.....	42
5.2 Kidney tubular epithelial cells histopathology examination.....	44
5.3 Kidney interstitial histopathology examination	46
5.4 Correlation between <i>Cukrik</i> Administration and Glomerular, Tubular, and Interstitial Damage	47
CHAPTER 6 DISCUSSION.....	49
6.1 Effect of <i>cukrik</i> on kidney glomerular.....	49
6.2 Effect of <i>cukrik</i> on kidney tubular	50
6.3 Effect of mixed <i>cukrik</i> on kidney interstitial	52
6.4 Research limitations	53
CHAPTER 7 CONCLUSIONS AND SUGGESTIONS	55
7.1 Conclusions.....	55

7.2 Suggestions	55
REFERENCES	56

List of Figure

Figure 2.1 Ethanol compound.....	6
Figure 2.2 Oxidative pathways of ethanol metabolism	7
Figure 2.3 Non Oxidative pathways of ethanol metabolism	8
Figure 2.4 methanol compound	9
Figure 2.5 metabolism of methanol	10
Figure 2.6 Formaldehyde oxidation.....	11
Figure 2.7 Anatomy of kidney	12
Figure 2.8 Histology of kidney	15
Figure 2.9 Histopathology of acute kidney injury	23
Figure 3.1 Conceptual framework	28
Figure 4.1 Research design	31
Figure 3.1 Research flow	32
Figure 5.1 Experimental animals	42
Figure 5.2 Histological features of Normal glomerular of the kidney with 400x magnification	43
Figure 5.3 Histological features of Thickening of bowman capsule in the glomerular of the kidney with 400x magnification	44
Figure 5.4 Histological features of retraction of glomerular tuft of the kidney with 400x magnification.	44
Figure 5.5 Histological features of normal tubular of the kidney with 400x magnification.	46
Figure 5.6 Histological features of Tubular damage with loss brush border of the kidney with 400x magnification.	47
Figure 5.7 Histopathological image of kidney interstitial damage is indicated by bleeding in the interstitial section with 400x magnification.....	49

List of Table

Table 2.1 RFFLE criteria for classification and staging AKI and the modification proposed by the AKIN network	22
Table 4.1 <i>EGTI scoring</i>	34
Table 5.1 Descriptive glomerular histopathological features using <i>EGTI Scoring</i>	42
Table 5.2 <i>Mann Whitney</i> non-parametric test for glomerular histopathology	34
Table 5.3 Descriptive tubular histopathological features using <i>EGTI Scoring</i>	35
Table 5.4 <i>Mann-Whitney</i> non-parametric test for tubular histopathology Tubular histopathological features using <i>EGTI Scoring</i>	44
Table 5.5 Descriptive interstitial histopathological features using <i>EGTI Scoring</i>	45
Table 5.6 <i>Mann whitney</i> non-parametric test for kidney interstitial histopathology ...	45
Table 5.7 Spearman correlation test data values for glomerular, tubular, and interstitial	46

List of Attachment

Attachment 1 : Surat Kelaiakan Etik	61
Attachment 2 : Table of Observation Results for tubular cells, glomerular cells, and interstitial cells	62
Attachment 3 : Result of SPSS	64

List of Abbreviations

ADH	: Alcohol dehydrogenase
AKI	: Acute Kidney Injury
AKIN	: Acute Kidney Injury Network
BPOM	: Badan Pengawas Obat dan Makanan
CDC	: Centers for Disease Control and Prevention
CYP2E	: Cytochrome P450 2E
ESRD	: end-stage renal disease
GFR	: Glomerular filtration rate
KDIGO	: Kidney Disease Improving Global Outcomes
NADH	: Nicotinamide adenine dinucleotide
NADP+	: Nicotinamide adenine dinucleotide
PCT	: proximal convoluted tubule
RIFLE	: Risk Injury Failure Loss End stage kidney disease
ROS	: Reactive Oxidative Species
WHO	: World Health Organization
EGTI	: Endothelial, Glomerular, Tubular, and Interstitial
HE	: Hematoxylin and eosin
PAS	: Periodic acid–Schiff
SD	: Standard Deviation
SPSS	: Statistical Product and Service Solution
Sig	: Significant
NSAID	: Non-steroidal anti-inflammatory drugs