Contents

Pa	age
List of Abbreviations	i
List of Figuresii	i
List of Tablesi	V
List of Graphicsv	i
Introduction	1
Aim of the Work	7
Review of literature	8
Chapter (1): Acute Kidney Injury	8
Chapter (2): Contrast-Induced Nephropathy4	4
Chapter (3): Biological Markers in AKI	4
Chapter (4): NGAL	5
Patients and Methods 11	5
Results	0
Discussion 14	6
Summary 15.	5
Conclusion and Recommendations 16	2
References	3
Arabic Summary	_

List of Abbreviations

Angiotensin converting enzyme inhibitors
Acute dialysis quality initiative
Acute kidney injury
Acute kidney injury network
aldesterone receptor blockers
Acute renal failure
Acute tubular necrosis
Area under the curve- Reciever Operating
Characteristic Curve
Contrast induced nephropathy
Chronic kidney disease
Calcineurin inhibitors
Continous renal replacement therapy
Computed tomography
Continous veno venous hemofilteration
Disseminated intravascular coagulopathy
Digital substraction angiography
Estimated creatinine clearance
Estimated glomerular filteration rate
Fatty acid binding proteins
Glomerular filteration rate
Gastrointestinal tract
High osmolar contrast media
Intraarterial
Intensive care unit
Intermittent hemodialysis
interleukin
Intermediate osmolar contrast media

IV	Intravenous
KDIGO	Kidney Disease Improving Global Outcomes
KIM-1	Kidney injury molecule -1
L-FABP	Liver type fatty acid binding proteins
LOCM	Low osmolar contrast media
LVH	Left ventricular hypertrophy
MAP	Mean arterial pressure
MDRD	Modification of diet in renal disease
NAC	N- acetyl cystiene
NGAL	Neutrophil gelatinase-associated lipocalin
NPV	Negative predictive value
NS	Normal saline
PCI	Percutaneous coronary intervention
PD	Peritoneal dialysis
PICARD	The program to improve care in acute renal disease
PPV	Positive predictive value
PRA	Prerenal azotemia
RBF	Renal blood flow
RNA	Ribonucleic acid
RRT	Renal replacement therapy
SIADH	Syndrome of inappropriate secretion of antidiuretic
	hormone
SLED	Sustained low-efficiency dialysis
uIL	Urinary interleukin
uKIM-1	Urinary Kidney injury molecule -1
uL-FABP	Urinary liver type fatty acids binding proteins
uNGAL	Urinary Neutrophil gelatinase-associated lipocalin
VA/NIH	Veterans Affairs/National institute of health

List of Figures

Figure	Title	Page
No.		No.
1	"Threshold" dose for contrast to minimize	51
	contrast-induced nephropathy in percutaneous	
	coronary intervention	
2	Estimating estimated glomerular filtration rate	60
	(eGFR) or estimated creatinine clearance	
	(eCCr) from serum creatinine (SCr) (mg/dL)	
3	Iron Thievery	105
4	The frequency of AKI among all the cases	124
5	The frequency of sex in AKI group	125
6	The frequency of HTN in AKI group	126
7	The frequency of DM in AKI group	127
8	The frequency of smoking in AKI group	128
9	The frequency of sex in Non-AKI group	129
10	The frequency of HTN in Non-AKI group	130
11	The frequency of DM in Non-AKI group	131
12	The frequency of smoking in Non-AKI group	132

List of Tables

Table	Title	Page
No.		No.
1	Classification and staging systems for AKI	18
2	Major causes of Pre-renal AKI	28
3	Major causes of acute intrinsic kidney injury	29
4	Reported risks for contrast induced	56
	nephropathy	
5	Kidney disease outcome quality initiative	61
	stages of chronic kidney disease	
6	Common hydration regimens used for renal	66
	protection.	
7	Factors affecting conventional markers of	80
	kidney function	
8	Qualities and characteristics of an ideal	89
	endogenous marker of glomerular function	
9	Ideal Biomarker Criteria	91
10	Demograghic data and premorbid conditions	121
	between the cases and control groups	
11	Clinical data of the cases and control groups	121
12	Laboratory data of the cases and control	122
	groups	
13	The mean value of group I and II for serum	123
	creatinine	
14	The mean value of group I and II for u-	123
	NGAL	
15	Demographic data and premorbid conditions	133
	between the AKI and Non AKI groups	

Table No.	Title	Page No.
16	Clinical data between AKI and Non AKI	134
	group	
17	Laboratory data between AKI and Non AKI	134
	group	
18	The mean value of creatinine level at day 0,	135
	1, 2 and 3 in AKI and non AKI patients	
19	The mean value of creatinine clearance at	135
	day 0, 1, 2 and 3 in AKI and non AKI	
	patients	
20	The mean value of uNGAL at 0, 2 and 4	136
	hours in AKI and non AKI patients	
21	The risk factors for AKI in our study	136
22	Correlations of u-NGAL at 2 hours among all	137
	cases patients	
23	Correlations of u-NGAL at 2 hours in AKI	138
	group	
24	Correlations of u-NGAL at 2 hours with	139
	echocardiography in AKI group	
25	Correlations of u-NGAL at 2 hours with IV	139
	contrast amount in AKI group	
26	Correlations of u-NGAL at 2 hours in Non	140
	AKI group	
27	The difference between s.creatinine and u-	145
	NGAL regarding cut off value, sensitivity,	
	specificity, PPV and NPV.	

List of Graphs

Graph No.	Title	Page No.
1	Correlation between u-NGAL after 2 hours and the amount of the intravenous contrast	141
2	The mean value of creatinine (precatheterization, at 1st, 2nd and 3rd day post-catheterization) for AKI and Non AKI patients	142
3	The mean Cr Cl (pre-catheterization, at 1st, 2nd and 3rd day post-catheterization) for AKI and Non AKI patients	143
4	The sensitivity and specificity of serum creatinine and u-NGAL.	144



Introduction





Aim of the Work





Review of Literature





Chapter (1)

Acute Kidney Injury





Chapter (2)

Contrast-Induced Nephropathy





Chapter (3)

Biological Markers in AKI



Chapter (4) NGAL



Patients and Methods

