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Acute Kidney Injury

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Incidence and Risk factors of Acute Kidney Injury after Femur Fracture Surgery

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Background: As the aging population increases, the number of patients with femur fractures caused by falling and traffic accidents is also increasing. It is known that mortality is high as well as the clinical course and prognosis are not good when acute kidney injury(AKI) is shown in the femur fracture patients. Nevertheless, there are not enough studies about AKI from the femur fracture patients. In this study, we want to show the correlation between the incidence and risk factors of AKI in patients with femoral fracture.

Methods: We retrospectively evaluated the medical records of 311 patients who were operated on for femoral fracture at Korea University Anam Hospital between January 2012 and October 2015. We evaluated the Incidence and Risk factors of AKI after Femur Fracture surgery and compared between AKI and normal kidney function (NKF) groups.

Results: The overall incidence of AKI was 9.2%. When compared to the normal kidney function (NKF) groups, the AKI group had a higher incidence of anemia (86.4% vs 51.6%, p = 0.001), hyponatremia (31.8% vs 13.4%, p = 0.021), ESR (45.5% vs 10.6%, p = 0.000), use of contrast agent (27.3% vs 6.9%, p = 0.001). In logistic regression analysis of risk factors, age (p = 0.049), lower estimated glomerular filtration rate levels (p = 0.05), contrast use(p = 0.04), diabetes mellitus (p = 0.002), heart failure (p = 0.012) were statistically significantly correlated with the development of AKI.

Conclusion: AKI after femur fracture was associated with longer hospitalization, morbidity and mortality. It is recommended that close evaluation and monitoring is needed for patients who have the risk factor of AKI after operation for femur fracture to reduce the possibility of AKI. In the future, We need prospective studies including biomarkers.

Table:

	Regression coefficient	p-value
Age	1.103	0.049
Sex	0.960	0.954
Anemia	3.166	0.154
Hyponatremia	1.534	0.574
Hyperkalemia	0.661	0.770
Increased ESR	2.258	0.304
Increased CRP	2.375	0.418

GFR	0.968	0.050
ACEi/ARB	1.306	0.689
NSAID	0.750	0.670
Nephrotoxic antibiotics	1.241	0.863
Contrast	5.274	0.040
HTN	0.518	0.412
DM	8.387	0.002
HF	8.014	0.012

Keywords: Acute Kidney Injury, Femur Fracture Surgery