



EVALUATION OF LONG TERM THIRST DUE TO RAMADAN FASTING IN TERMS OF ACUTE KIDNEY INJURY

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INTRODUCTION

Acute kidney injury (AKI) is characterized by rapid decline of renal function within hours and days. Long-term thirst due to fasting may cause a decrease of both intravascular volume and kidney perfusion. The diagnosis of AKI still determined by increasing of serum creatinine level and decreasing of urine volume.

The aim of this study; to investigate the relationship between long term dehydration due to fasting an AKI in older than 60 years old people who healthy or hypertensive and using ACE inhibitors with predicate the criteria's on described by AKIN.

METHOD

Forty-five people (24 females, 21 males; mean age, 75±12 years) whose kidney functions were normal and fasting in 2014 Ramadan month were participated to this study. Study was done during 3rd and 4th weeks of Ramadan. Patients were studied under 3 groups; first group was 15 patient over 60 years old and using ace inhibitors for hypertension, second group was also 15 people over 60 years old without using drugs, third group was 15 healthy people under 40 years old. The time during thirst was 18 hours. AKIN criteria's are used for acute kidney injury diagnosis.

RESULTS

Average thirst period urine volume was 900±166 ml. It is observed that %70 of total urine volume was in first 6 hours period. Second period average urine volume was 174±61 ml. Third 6 hours period was 78±29 ml. Urine volume was calculated as ml/kg/hour of all group; 2nd 6 hours period was AKI stage 1, for the last 12 hours period was AKI stage 2.

There was a small (0.06 mg/dl) but statistically significant increase in mean serum creatinine level in all groups (p=0.001). Cases could not be evaluated in terms od AKIN-creatinine criteria because of thirst period wasn't 48 hours and increase of creatinine wasn't 0.3 mg/dl.

TABLE 1: Urine volume during thirst period

	Urine volume (ml) (First 6 hours)	Urine volume (ml) (Second 6 hours)	Urine volume (ml) (Third 6 hours)	Total Urine volume (ml)
Age < 40	646 ±116	176,67±60 (0.42±0.14 ml/kg/h)	72±27,24 (0.17±0.07 ml/kg/h)	894±141
Age > 60	638± 147	171±70,26 (0.40±0.12 ml/kg/h)	82±31,89 (0.18±0.07 ml/kg/h)	900±182
Age > 60 + ACE-i	652 ± 152	174,67±55 (0.35±0.15 ml/kg/h)	80,33±27 (0.16±0.06 ml/kg/h)	907±175

TABLE 2: Serum creatinine level during thirst period

	Morning	Evening (before fasting break)	p
Age <40	0,78± 0,15 (mg/dl)	0,85 ±0,13 (mg/dl)	p=0,001
Age >60	0,88±0,12 (mg/dl)	0,94 ±0,13 (mg/dl)	p=0,001
Age >60 + ACE-i	0,77±0,14 (mg/dl)	0,82 ±0,13 (mg/dl)	p=0,001

CONCLUSION

It is detected that long thirst of Ramadan fasting caused a small but significant increase of creatinine levels for 3 groups, but this increase were not quite enough for the the criteria's AKI described by AKIN. Evaluation of the volume of urine, it's also observed that all 3 groups had AKI stage 2. It is concluded that AKIN- urine volume criteria is not adequate by itself to evaluate for the patients who are fasting during in Ramadan month, because the urine volume became to normal in a couple of hours after fasting break.

