



Ramadan Effect on Biochemical, Hemodynamic and Treatment Adherence Para Meters in Hemodialysis Patients

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Objectives

To examine if fasting and life style changes in the month of Ramadan affect the biochemical parameters, compliance with dialysis, inter-dialytic weight gain, pre- and post- BP or the frequency of intradialytic hypotensive episodes.

Methods

This is a multicenter observational cross-sectional study comparing fasting and a non-fasting groups of stable adult hemodialysis patients for demographic and biochemical parameters, compliance with dialysis, inter-dialytic weight gain, pre- and post- BP or the frequency of intradialytic hypotensive episodes.

They were free to choose to fast or not as a personal choice. To distinguish between the effect of fasting per se from the effect of the life style changes that occur in Ramadan, we compared the intra-group findings in the two groups before and during the month of Ramadan

Results

635 hemodialysis patients from five different dialysis centers in Saudi Arabia were included. Among these 64.1% fasted voluntarily throughout the month of Ramadan on the days they did not have a dialysis session. The mean ages of the fasting and non-fasting groups were 53.3 ± 16.2 and 58.4 ± 16.1 years respectively ($p=0.001$) and the mean durations on dialysis are 4.1 ± 4.8 and 3.7 ± 4.8 years respectively ($p=0.35$). No significant differences were seen among the two groups in sex, shift and weekdays of dialysis session or diabetic status. More of the fasters worked during Ramadan (22.0% versus 14.6% ; $p=0.001$).

Percent of fasters who missed dialysis sessions rose from 6.6% before Ramadan to 12.9% in Ramadan month while staying the same for non-fasters (7.3% and 7.3% respectively).

No differences were seen between the fasting and non-fasting groups in serum potassium, albumin or weight gain. However, the serum phosphorous was significantly higher in the fasting group (2.78 ± 1.8 and 2.45 ± 1.6 mmol/l respectively; $p=0.045$). Pre- and post-dialysis systolic and diastolic BP findings were similar in the fasting and non-fasting groups during Ramadan.

In both groups no within-group differences were noted in any of the parameters studied during Ramadan month compared to the month before Ramadan. Although the inter-dialytic weight gain and the pre and post SBP and DBP BP levels in Ramadan were marginally higher in the fasting group, this did not reach significant levels.

Comparing the two groups we find no differences in diabetic status ($p=0.15$), sex ($p=0.4$), shift ($p=0.5$), days of dialysis ($p=0.25$). However there were more working patients in the fasting group (72.9% versus 62.6% $p=0.000$)

Table. Comparing findings in the fasting group in Ramadan and before Ramadan

	Ramadan (mean± std)	Before Ramadan (mean± std)	P value
Serum K ⁺	4.9±1.6	4.9±0.9	0.9
Serum phosphorus	2.78± 1.9	2.86 ±1.9	0.15
Serum albumin	34.4±6.5	34.8±4.9	0.23
Weight gain	2.92±1.3	2.83±1.3	0.14
Pre-Dx SBP	143.2±23.9	141.7±23.9	0.27
Post- Dx SBP	133.5±21.5	131.3±23.3	0.07
Pre-Dx DBP	75.1±16.4	73.1±15.3	0.21
Post-Dx DBP	71.6±13.9	70.6±15.7	0.37
Volume of saline	38.2±107	35.8±89	0.5

Conclusion

Fasters, compared to non-fasters were significantly younger and more likely to be working and to miss dialysis sessions and to have higher serum phosphorous levels. There were no differences seen in dialysis weekdays or shifts, sex or diabetic status between the two groups.

Inter-dialytic weight gain in Ramadan was marginally higher in the fasting group. However Ramadan month had no impact on either group in the serum levels of potassium, and albumin

