Female hemodialysis patients have poor dietary energy and protein intake on weekend

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Introduction

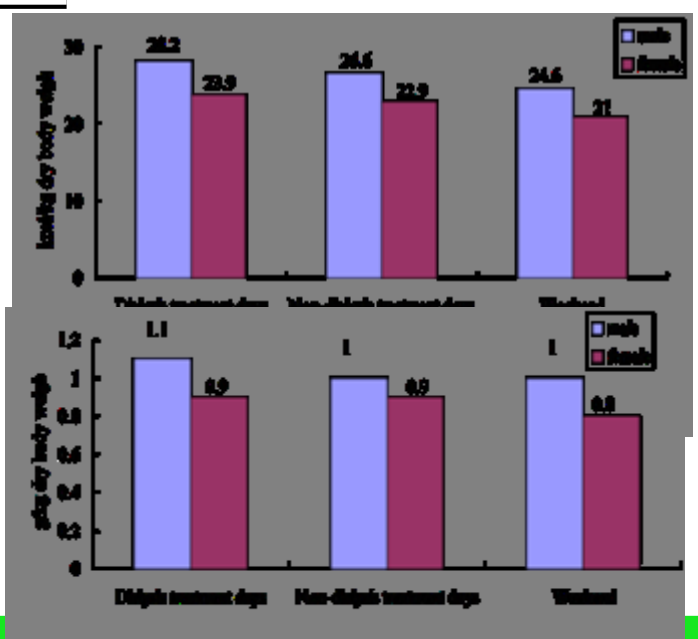
Hemodialysis patients with malnutrition have significantly higher morbidity and mortality. The major cause of malnutrition is inadequate dietary intake. Burrowes and his colleagues demonstrate that hemodialysis patients' dietary intake are difference between dialysis treatment days and non-dialysis treatment days. However, there is no paper mentioned about the difference among weekend and dialysis treatment days or non-dialysis treatment days.

Objective

To evaluate the dietary energy intake and protein intake between male and female hemodialysis patients among dialysis treatment days, non-dialysis treatment days and weekend.

Methods

Ninety-five adults who received hemodialysis treatment for at least 3 months were recruited. All subjects were from Taipei Medical University Hospital or Wanfang Hospital. The demographic information, dry body weight, serum albumin, Kt/V and 3-day dietary record were collected from Apr. 2010 to Dec.2010. Geriatric nutritional risk index (GNRI) was used as nutritional parameter. We analyzed the dietary energy and protein intake and compared with K/DOQI guideline.



Results and Discussion

Very fewer female subjects had adequate dietary intake on weekend than dialysis day and non-dialysis day. Too much fluid adherence for hemodialysis subjects may contribute to poor dietary intake on weekend. Zabel and his colleagues proposed that male hemodialysis patients have better appetite than female dialysis patients.

Conclusion

Our study revealed that female hemodialysis patients had poor dietary intake during the weekend and much lower than K/DOQI's recommendation. We suggest that female hemodialysis patients may need more intervention on their dietary intake to prevent worst prognosis.

Table 1. Demographic and nutrition status data[1]

	All subjects	Male	Female	P value (*t*-test)
n	95	44 (46%)	51 (54%)	
Age (years)	63.6 ± 15.1	64.7 ± 14.3	62.6 ± 15.8	0.4906
Dialysis duration (month)	49.3 ± 49.3	70.2 ± 54.3	31.2 ± 36.4	0.0001
(range)	(3 ~ 235)	(7 ~ 235)	(3 ~ 197)	
Dry body weight (kg)	60.4 ±12.4	64.7 ± 12.7	56.7 ± 11.0	0.0016
Body mass index (kg/m^2)	23.1 ± 4.0	23.0 ± 3.5	23.1 ± 3.4	0.8718
GNRI[2]	102.6 ± 10.5	102.9 ± 8.9	102.4 ± 11.7	0.8293
Kt/V[3]	1.6 ± 0.3	1.5 ± 0.4	1.7 ± 0.3	<0.001

[1]Values present as mean ± SD and be analyzed by t-test. [2]GNRI: geriatric nutritional risk index. [3]Male: n = 43

Table2. Dietary energy and protein intake during dialysis treatment days, non-dialysis treatment days and weekend[1]

	Energy (kcal)	Energy/dry body weight (kcal/kg)	Protein (g)	Protein/dry body weight (g/kg)
Average	1341.8 ± 418.9	22.9 ± 8.0	54.2 ± 20.6	0.9 ± 0.4
Dialysis treatment days				
Male	1612.6 ± 588.0	28.2 ± 12.2	65.1 ± 28.4	1.1 ± 0.5
Female	1248.5 ± 430.8	23.9 ± 9.1 [a]	50.0 ± 19.1	0.9 ± 0.4[a]
Non-dialysis treatment days				
Male	1534.1 ± 573.3	26.6 ± 10.8	61.1 ± 25.5	1.0 ± 0.4
Female	1192.5 ± 452.1	22.9 ± 9.7[a]	48.3 ± 19.6	0.9 ± 0.4[a]
Weekend				
Male	1430.7 ± 529.7	24.6 ± 9.4	60.4 ± 27.3	1.0 ± 0.5
Female	1100.4 ± 328.7	21.0 ± 7.4[b]	43.4 ± 14.8	0.8 ± 0.3[b]

[1]Values present as mean ± SD. [a, b] Values with different superscripts are significantly different at $p < 0.05$ by one-way repeated measures ANOVA.
*Different from male subjects, $P < 0.05$ by unpaired *t*-test