

ORIGINAL RESEARCH COMMUNICATION

Comparison of nutritional and inflammatory markers in dialysis patients with reduced appetite^{1,2,3}

Juan Jesús Carrero, Abdul Rashid Qureshi, Jonas Axelsson, Carla María Avesani, Mohammed E Suliman, Sawako Kato, Peter Bárány, Sunna Snaedal-Jonsdottir, Anders Alvestrand, Olof Heimbürger, Bengt Lindholm and Peter Stenvinkel

¹ From the Divisions of Renal Medicine and the Baxter Novum Clinical Research Laboratory, Department of Clinical Science, Intervention and Technology, Karolinska Institute, Karolinska University Hospital at Huddinge, Stockholm, Sweden (JJC, ARQ, JA, MES, SK, PB, SS-J, AA, OH, BL, and PS); the Division of Nephrology, Department of Medicine, Federal University of São Paulo, Brazil (CMA); and the Division of Nephrology, La Paz University Hospital, Madrid, Spain (JJC)

Background: Anorexia is common in chronic kidney disease and worsens as the disease progresses. Sex hormones and inflammatory cytokines may be related to feeding behavior.

Objective: We hypothesized that appetite would be related to inflammation and outcome in hemodialysis patients but that sex may account for differences in the symptoms associated with poor appetite.

Design: A cross-sectional study was conducted in patients undergoing prevalent hemodialysis ($n = 223$; 127 M; $\bar{x} \pm SD$ age: 66 ± 14 y). Anthropometric markers of body composition, handgrip strength, and nutritional and inflammatory status were measured, and 3 groups according to their self-reported appetite were established. Overall mortality was assessed after 19 mo (range: 2–29 mo) of follow-up.

Results: Poor appetite was associated with a longer vintage time, increased inflammation (higher serum concentrations of interleukin 6 and C-reactive protein), and a worse nutritional status (lower serum concentrations of insulin-like growth factor I, albumin, urea, and creatinine). However, across worsening appetite scale, handgrip strength was incrementally lower in men but not in women (multivariate analysis of variance). In a multivariate logistic regression analysis (pseudo $r^2 = 0.19$), appetite loss was associated with sex [odds ratio (OR): 0.41; 95% CI: 0.24, 0.72], insulin-like growth factor I (3.58; 2.10, 6.32), and C-reactive protein > 10 mg/L (2.39; 1.34, 4.11). Finally, appetite loss was associated with worse clinical outcome even after adjustment for age, sex, inflammation, dialysis vintage, and comorbidity (likelihood ratio = 44.3; $P < 0.0001$).

Conclusions: These results show a close association among appetite, malnutrition, inflammation, and outcome in patients undergoing prevalent hemodialysis. Moreover, our data suggest that uremic men may be more susceptible than are women to inflammation-induced anorexia.

Key Words: Hemodialysis • inflammation • malnutrition • appetite • anorexia • sex • outcome

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