

Wanting and spontaneous intake for protein-rich foods increase immediately after hemodialysis in chronic kidney disease patients.

Introduction : Protein-energy malnutrition is a risk factor for mortality and complications in hemodialysis patients. Changes in food reward system (*liking* and *wanting* for different macronutrients) induced by hemodialysis are not known. The aims were in hemodialysis patients, a day with and a day without dialysis to, 1) investigate the components of the reward system for protein-, fat- and carbohydrate-rich foods with simultaneous determinations of several plasmatic parameters and, 2) evaluate the spontaneous *ad libitum* intake of the macronutrients from a buffet at lunch.

Methods : In EXP.1, 24 hemodialysis patients (age: 61 ± 13 yrs.) had determinations of their hunger sensation at two time points (7.30 am and 11.30 am), *liking* for 6 foods (rich in proteins, fat or carbohydrates) and *wanting* (18 foods on pictures), a day before and a day after their dialysis (performed during the morning). 24 healthy subjects (59 ± 14 yrs.) served as controls. Ghrelin, leptin, insulin and amino acids levels were also determined. In EXP.2, 18 hemodialysis patients (69 ± 11 yrs.) ate what they wanted of 8 courses from a buffet, a day with and a day without dialysis. 18 healthy subjects (68 ± 12 yrs.) served as controls.

Results: In EXP.1, at 11:30 am, the *wanting* for protein-rich foods in patients was higher the day with dialysis than the day without dialysis ($P < 0.01$), therefore bringing back protein *wanting* to a similar level than that of healthy subjects. These changes correlated with changes of plasmatic amino acids levels. In EXP.2, hemodialysis patients ate more proteins from the buffet ($P < 0.01$) after dialysis compared to the day without dialysis while no significant difference in energy, fat and carbohydrates contents were observed. After dialysis, hemodialysis patients ate even more protein-rich foods ($P < 0.01$) than healthy subjects.

Conclusions: In hemodialysis patients, *wanting* and spontaneous intake of protein-rich foods increased immediately after dialysis. These increments seem to be related to a decrease in plasmatic amino acids levels. Thus protein-energy malnutrition could be prevented in these patients by supplementation of proteins during the period where this macronutrient is well appreciated.