NUTRITIONAL STATUS, APPETITE AND MENTAL-PSYCHOLOGICAL STATUS IN PERITONEAL DIALYSIS PATIENTS

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OBJECTIVES

Malnutrition (MN) is the first dietetic complication in peritoneal dialysis (PD) patients and it is strictly correlated with an increased risk of morbidity and mortality (1-3). The prevalence of MN varies in the literature: multicenter study groups reports a severe grade of malnutrition in 4-8% of patients and moderate malnutrition in 33-55% (4). The causes of MN in PD patients are different: it can depend on inflammation status, metabolic disorder caused by Chronic Kidney Disease, dietetic intake, appetite, and mental-psychological health (5).

METHODS

A total of 41 prevalent PD patients (21 males, mean age 64.9 ± 14.9 years) were included. All patients underwent an assessment of nutritional status, appetite and mental-psychological status. The first one was assessed using the malnutrition inflammation score (MIS) and other methods (albumin, transferrin, triglyceride, lymphocytes and cholesterol serum levels); appetite was assessed with the council nutritional assessment questionnaire (CNAQ) and the mental-psychological health with the mental component scale (MCS) of short form-12 (SF-12) questionnaire. We evaluated our patients in two times: at the first meeting (T_0) and six months later (T_1): nutritional status and appetite were assessed both at T_0 and T_1, MCS was assessed at T_1.

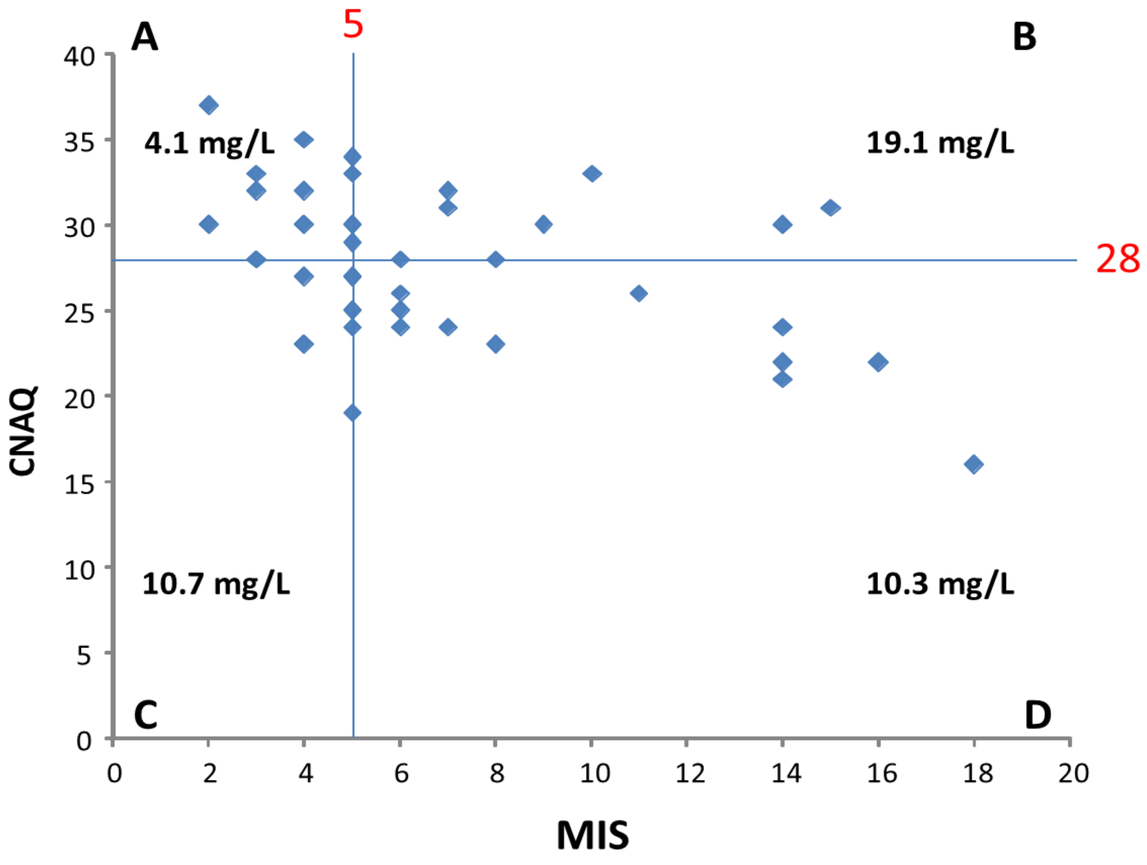

Figure 1. Correlation between MIS T_0 and CNAQ T_0; MIS ≤5 indicates a good nutritional status, CNAQ ≥28 indicates good appetite.

RESULTS

The percentage of malnourished patients depended on the method used for the evaluation both at T_0 and T_1. We found that the highest MIS (worst nutritional status) was correlated to lower nephelometric albumin and cholesterol serum levels at T_0 and T_1 ($p<0.001$, $p<0.01$ and $p<0.001$, $p<0.05$); the highest MIS was also correlated to lower triglyceride serum levels at T_0 ($p<0.05$), while at T_1 we found a marked tendency towards correlation.

We studied the correlation between MIS, protein intake and C-reactive protein (CRP): there was no correlation at T_0, while there was a positive correlation between MIS and CRP ($p<0.05$) at T_1. We also studied the correlation between MIS and CNAQ at T_0: in the chart (Figure 1) we inserted one secondary horizontal axis for CNAQ ≥28 and one secondary vertical axis for MIS ≤5, obtaining a scatterplot with four boxes:

- box A: patients with good nutritional status and good appetite;
- box B: patients with bad nutritional status but good appetite;
- box C: patients with good nutritional status but bad appetite;
- box D: patients with bad nutritional status and bad appetite.

Analyzing the average CRP serum level for each box, the highest one was the value of box B (CRP=19.1 mg/l).

We studied the correlation between CNAQ at T_0 and MIS at T_1: higher CNAQ (better appetite) was correlated to lower MIS (better nutritional status) ($p<0.05$).

Another factor that can influence nutritional status is the psychological and mental state: our study showed that a lower MCS (mental-psychological status) was correlated to a higher MIS ($p<0.01$), lower nephelometric albumin ($p<0.05$) and lower CNAQ ($p<0.005$).

CONCLUSIONS

This study demonstrates that MIS can be used to evaluate the nutritional status of PD patients. This study also demonstrates that nutritional status is influenced by inflammation (CRP) and appetite: while the inflammation status influences immediately the nutritional status, appetite has long term consequences. Nutritional status and appetite are also influenced by psychological and mental state.

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