Continuous Ambulatory Peritoneal Dialysis Does Not Prevent the Development of Dialysis-Associated Amyloidosis

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Table 1. Clinical data

Group

HD CAPD

Dear Sir,

We have read with interest the letter by Sethi et al. [1]. Since the first report by Ballardie et al. in 1986 [2] the question has not been answered.

Until now, few studies have been published showing evidence of dialysis-associated amyloidosis (DAA) in continuous ambulatory peritoneal dialysis (CAPD) patients. Even though descriptions on the presence of beta-2-microglobulin (B2M) in carpal tunnel syndrome (CTS) are scanty, cases with bone lesions similar to those found in hemodialysis (HD) patients with amyloid arthropathy (AA) have been published [3].

We carried out a comparative study in 51 patients, 14 on CAPD and 39 on HD (mainly with cuprophane membranes), who were selected for a treatment period longer than 4.5 years (table 1). Rheumatological, radiological, and electromyographical evaluations as well as biochemical determinations of hemoglobin, Ca, Ca²⁺, P, Mg, alkaline phosphatase, parathyroid hormone, blood urea nitrogen, serum creatinine, uric acid, iron, ferritin, B2M, sedimentation rate, and C-reactive protein were performed.

Radiological examination was carried out by 3 different observers who analyzed the existence of lytic lesions, destructive spondyloarthropathy (discitis), and the degree of secondary hyperparathyroidism. The results are summarized in table 2.

The incidence of CTS was similar in both HD and CAPD groups, with a mean duration of 107 ± 47.5 and 40.5 ± 16.07 months, respectively, the intensity of symptoms being lesser in the CAPD group. Bone cysts were found mainly in the carpus, although in 61.5% of the cases there were associations with other localizations. Evaluating the existence of either CTS, lytic lesions, or discitis, 36% of the HD and 50% of the CAPD patients failed to show any of them.

Age years

Diuresis ml/24 h

Sex

M/F

Treatment months

50.7 ± 20 47.9 ± 13

21/18 6/8

42.5: 203:

: 123

:31.2

121.1 ± 42.5 73.9 ± 18.4

Table 2. Incidence of different features related with DAA and plasmatic B2M levels in HD and CAPD patients

A statistical correlation did not exist between the presence of CTS, bone cysts, or discitis and the level of B2M and any other biochemical parameter studied. No relationship was found between the degree of secondary hyperparathyroidism and AA.

Our results confirm the occurrence of typical AA in patients on CAPD treated for long periods of time. Magnitude and intensity of lesions seem to be lesser than in HD patients. The incidence of CTS is similar in both groups. Even though material for histological study was not available in our CAPD cases, the coexistence of lesions generally recognized as diagnostic of AA make us think of the same pathological entity as that responsible for this alteration. These observations add interest to the controversy about the etiopathogenesis of DAA and the

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role which the type of dialysis membrane and B2M levels could play. Discrepancies still exist about B2M plasmatic levels in CAPD in comparison with HD patients. In our study, the B2M levels were lower in CAPD than in HD patients.

Although the peritoneal membrane is the most bio-compatible one, other factors inherent in the whole CAPD process, such as dialysis solution, contaminants, etc., make it still not such a biocompatible method [4]. Other factors different from B2M and perhaps dependent on the prolonged uremic state or dialysis method itself must be considered. Although DAA is being recognized with increased frequently in CAPD, further and more extensive studies are required to better determine the real incidence and particular characteristics of this complication in this mode of therapy.

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