Is There a Correlation Between Immunologic and Psychological Parameters in Peritoneal Dialysis Patients?

Editor:

Some studies have evaluated quality of life (QoL) in hemodialysis patients and the relationship between psychological indices and clinical parameters (1,2); however, no study has investigated the link between immunologic and psychological parameters in patients on peritoneal dialysis (PD). During 2009, we prospectively studied 56 subjects on PD treatment, analyzing the immunologic and psychological parameters related to perceived QoL and levels of anxiety and depression. The patients were assessed twice during a period of 6 months.

All subjects were resident in Italy; 55.4% were men; 52% were less than 60 years of age, 38% were 60–70, and 10% were more than 70. We tested C3 and C4; immunoglobulins G, A, and M; C-reactive protein (CRP); and white blood cells. For the psychological assessment, we used specific self-report tests. All results were statistically analyzed using the SPSS software application (SPSS, Chicago, IL, USA).

Immunoglobulins G and A were significantly inversely correlated with physical activity level (using items on the Short Form Health Survey, SF-36, for assessing QoL) (3) and directly correlated with “external locus of control” (dependency on others for management of disease and therapy—for example, relatives). By contrast, immunoglobulin M was directly and significantly correlated with “positive attitude” (coping strategies) and health related to locus of control focused on the role of doctors.

The greatest and most interesting correlations were seen with C3 levels. Certain perceived QoL parameters such as physical activity, physical pain, sense of vitality, mental health, and perceived family support (using the Multidimensional Scale of Perceived Social Support

to measure social support) (4) showed a significant inverse correlation with C3. A significant correlation was observed between C3 and “transcendent focused orientation” (using the Coping Orientation to Problems Experienced questionnaire for measuring coping styles) (5) and anxious–depressed mood (higher C3 levels with higher anxious mood). The immunologic and nutrition parameter C3 also increased with increasing PD vintage, especially after year 3, confirming an inflammatory condition in patients on PD.

No correlations with white blood cells, C4, and C-reactive protein were observed.

Our study, worthy of further investigation, seems to show correlations between immunologic changes and chronic psychophysical stress during PD. The observed correlations between psychological and immunologic variables suggest that an impaired immune response and high levels of psychological stress may influence each other and worsen the QoL of patients. These markers might represent a new and reliable method for identifying individuals at high risk of morbidity or mortality.

DISCLOSURES

The authors have no financial conflicts of interest to declare.

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