

BRIEF REPORT

ANXIETY AMONG PATIENTS UNDERGOING HEMODIALYSIS

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Chronic kidney disease (CKD) is a growing global health problem with a steadily increasing prevalence and high associated mortality compared to general population. CKD is characterized by a progressive and irreversible decline in kidney function, often leading to end-stage renal disease (ESRD).¹

Nearly four million individuals worldwide are currently receiving kidney replacement therapy (KRT), with hemodialysis (HD) representing a widely used modality. HD accounts for approximately 69% and 89% of all KRT and of all HD treatments, respectively. Since its introduction in the 1960s, dialysis technology has improved considerably, particularly in high-income countries. However, significant global disparities persist in the availability, accessibility, affordability, and outcomes of HD patients. Moreover, disadvantaged groups such as indigenous populations, women, and individuals of advanced age face substantial inequities in care.² The transition to the HD-dependent lifestyle may increase patients' vulnerability to emotional disturbances, such as anxiety, affecting about 12%–52% of individuals.^{1,3}

Anxiety is a common human response to perceived threat, often accompanied by autonomic activation and physical symptoms. It reflects an uncertain or diffuse sense of danger that may be real or imagined and triggers defensive “fight-or-flight” reactions. While anxiety can be adaptive by enhancing preparedness and coping, excessive intensity or persistence transforms it into a maladaptive state that disrupts psychological balance and daily functioning. Anxiety can be classified by severity (mild, moderate, severe) and by temporal pattern, distinguishing transient situational responses from more stable predispositions.^{1,3,4}

Clinical manifestations include both physical and psychological symptoms. Physical signs involve autonomic and somatic activation such as tremor, muscle tension, headache, dyspnea, palpitations, sweating, and gastrointestinal or urinary disturbances. Psychological features commonly include fear, impaired concentration, hypervigilance, insomnia, and irritability. Persistent anxiety, occurring on most days over an extended period, is associated with significant functional

impairment, whereas transient episodes are generally shorter-lived and context-dependent.^{3,4}

The development of anxiety in patients receiving HD is considered multifactorial, involving biological and treatment-related mechanisms. A wide spectrum of clinical parameters including comorbidity, insomnia, functionality, pharmacological regimen (antihypertensive agents), biochemical indicators (creatinine, blood urea nitrogen), nutritional and physical status (fatigue), as well as HD related characteristics (treatment duration, weekly frequency) are associated with variations in psychological development and outcomes. In addition, vascular access modality is a clinical factor, frequently associated with psychological disturbance. Furthermore, the use of central venous catheters has been linked to poor mental health status, reduced quality of life, lower survival rates, and increased hospitalization when compared with arteriovenous fistulas and grafts.^{1,2,4-6}

Other contributing factors for anxiety include the accumulation of uremic toxins, cerebrovascular alterations, oxidative stress, activation of the renin–angiotensin–aldosterone system, as well as the psychological and practical burdens of chronic CKD, such as complex medication regimens, dietary and fluid restrictions, and financial demands of HD therapy.²

Interestingly, in chronic illness patients' perceptions may have an impact on their quality of life.^{7,8} In HD patients, poor well-being is associated with greater symptom severity, perceived consequences of illness, and a lower sense of personal control.⁷

The absence of clear relationships between anxiety and related variables (demographic or clinical) complicates early detection of psychological distress. As a result, systematic psychological screening should be integrated into standard clinical practice. In addition, persistent or newly developed symptoms of anxiety have been linked to lower levels of perceived social support, highlighting the need for further investigation into the role of social resources among patients undergoing HD.⁵

A short cognitive behavioral intervention (CBI) has been shown to be effective in reducing anxiety symptoms in patients

undergoing HD. The intervention lasting five weeks included techniques such as relaxation training, deep breathing, cognitive restructuring, and positive self-reinforcement. It is observed a significant reduction in anxiety levels among HD patients who receive CBI. Therefore, short-term cognitive behavioral approaches may be beneficial in the management of anxiety in HD patients.⁹

Finally, while the effects of depression on dialysis outcomes are well established, the contribution of anxiety to treatment adherence and HD-related complications has received considerably less attention. Given the complexity of HD care, anxiety may undermine adherence to prescribed treatment regimens, thereby predisposing patients to unfavorable clinical outcomes.¹⁰

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