SELF REPORTED DEPRESSION AND ANXIETY IN PREVALENT PATIENTS ON HEMODIALYSIS

Konstantina Trigka[1], Periklis Dosdampanis[1], Maria Rodi[2], Costas Fourtounas[3]

(1)Kyanous Stavros Dialysis Unit, Patras, Greece

(2)Division of Hematology, Department of Internal Medicine, , Faculty of Medicine, Patras, Greece

(3) Nephrology Department, University of Patras, Patras, Greece

Objective

Chronic diseases are frequently connected to depression and anxiety, leading to therapy incompliance and higher morbidity and mortality. Previous studies have shown that the prevalence of depression is high (20-30%) in patients with chronic kidney disease (CKD). An overlap of depressive and uremic symptoms often precludes diagnosis and treatment of depressive states.

We aimed to evaluate the prevalence of depression and anxiety in chronic kidney disease (CKD) patients on HD. In more detail, we described the prevalence of anxiety and depression tests that were applied to hemodialysis patients, tried to access the relationship among them and explored the possible correlations with clinical and laboratory variables.

Materials and Methods

We studied 84 patients from a single hemodialysis centre in Patras, Greece. These patients were on hemodialysis between May 2012 and December 2012, for a median time of 43.10±36.54. Each patient received and completed voluntary the following tests: BDI, GDS, GAD-7 and HADS. The cutoff for the diagnosis of depression in the BDI was 16 points, for GAD-7 >9, for HADS >8 and for the geriatric scale >5.

Additional questions considered among others, clinical variables related to underlying kidney diseases, HD-duration, HD-access, HD-shift, dialysis modality, interdialytic weight gain, number of days spent in hospital during the last year, number of drugs taken in total, administration of psychiatric drugs, coronary artery disease, diabetes mellitus, COPD and active list for kidney transplantation. In tandem, laboratory parameters that referred to bone-mineral disorder and anemia, for pre-HD average of 7 laboratory measurements of the year 2012, were measured. Concomitant diseases were assessed by the Charlson Comorbidity Index (CCI).

Scores for the obtained tests and the laboratory and clinical variables, were compared in patients.

Table 1: Patients characteristics

	Males	Females	Total
N	57	27	84
Age	69.14±12.3	71.15±12.09	69.79±12.2
Diabetics	13(15.47%)	11 (13.09%)	24(28.57%)

The Beck Depression Inventory (BDI, BDI-II), is a 21-question multiple-choice self-report inventory, one of the most widely used instruments for measuring the severity of depression, from a psychodynamic perspective, instead of it being rooted in the patient's own thoughts. In its current version the questionnaire is composed of items relating to symptoms of depression such as hopelessness and irritability, cognitions such as guilt or feelings of being punished, as well as physical symptoms such as fatigue, weight loss, and lack of interest in sex.[1]

HDAS is a self-assessment scale that was developed for detecting states of depression and anxiety in the setting of a hospital medical outpatient clinic. It is a self-rating instrument for anxiety and depression in patients with both somatic and mental problems. It is an instrument with good psychometric properties in terms of factor structure, sub-scale intercorrelation, homogeneity and internal consistency.

The GDS is a brief, 15-item questionnaire in which participants are asked to respond by answering yes or no in reference to how they felt over the past week. Of the 15 items, 10 indicated the presence of depression when answered positively, while the rest indicated depression when answered negatively. Scores of 0-4 are considered normal, 5-8 indicate mild depression; 9-11 indicate moderate depression; and 12-15 indicate severe depression. The GDS was found to have a 92% sensitivity and a 89% specificity when evaluated against diagnostic criteria.

Generalized Anxiety Disorder questionnaire (GAD-7) is a validated tool to identify potential patients suffering excessive anxiety symptoms, worrying, nervous feeling, irritability, concentrations difficulties, muscle stress, sleep disturbances and fatigue syndrome.

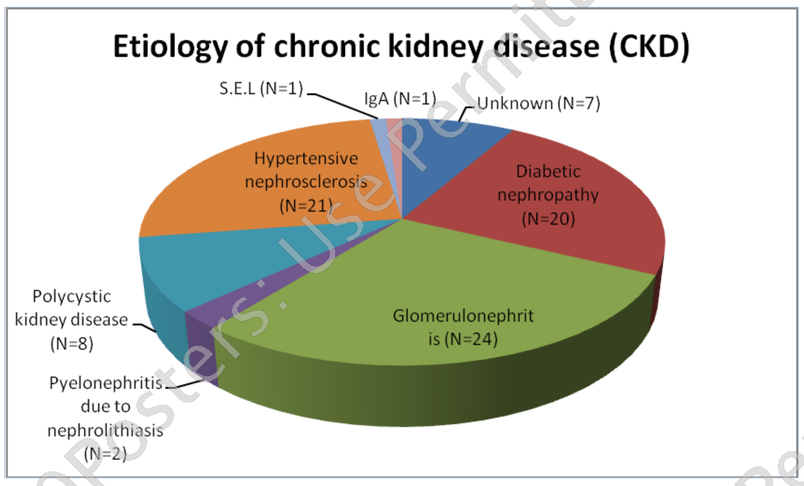

Fig 1: Etiology of kidney disease

Table 2: Hemodialysis (HD) Modalities and Dialysis Vintage

HD Modality	Patients	Duration in months
HD	44 (52.38%)	38.03±39.85
HDF	17 (20.23%)	54.06±28.11
On-line HDF	23 (27.38%)	45.57±34.19

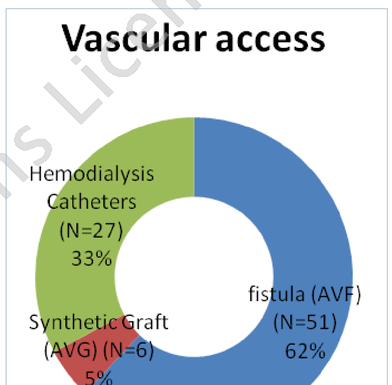

Fig 2: Type of vascular access

Results

Depression was found in 54.76% patients using the HADS test for depression, in 59.03% patients using the BDI test and in 54.21 % patients using the geriatric scale. 36.90 % percent of our studied patients exhibited a clinically relevant anxiety disorder using the HADS test for anxiety and in 33.75% patients using the GAD-7 test.

The mean HADS anxiety score was 12.60±4.88 for anxiety and 9.19±5.40 for depression, the mean GAD-7 was 7.58±5.65, the mean BDI was 20.27±12.35 and the mean GDS was 7.87±12.72. Depression was found in 54.76% using the HADS test, in 59.03% using the BDI test and in 54.21% using the geriatric scale. 36.90 % percent of our patients exhibited a clinically relevant anxiety disorder using the HADS test for anxiety and in 33.75% patients using the GAD-7 test.

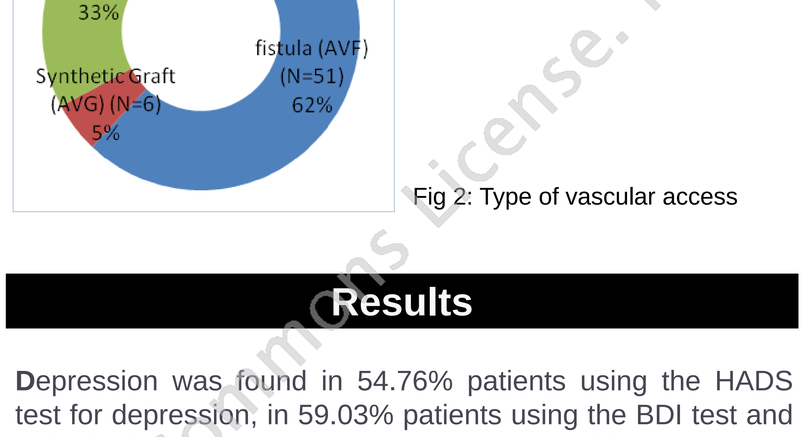

Fig3: At least one test was reported positive by 8.33% patients, two tests were reported positive by 34.52% patients, three tests by 10.71% patients, four tests by 11.90% patients, all five tests were positive by 17.85% of the patients and none of the tests were reported positive by 16.66% of the patients.

Table 3: Pearson's R test revealed correlation of the BDI score with the increased inter-dialytic weight gain, whereas there was no significant correlation found between HADS (A/D), GAD-7 and GDS scores.

Correlation	BDI	HADS A	HADS D	GAD-7	GDS
Interdl wg	r=-0.249 p=0.023	ns	ns	ns	ns

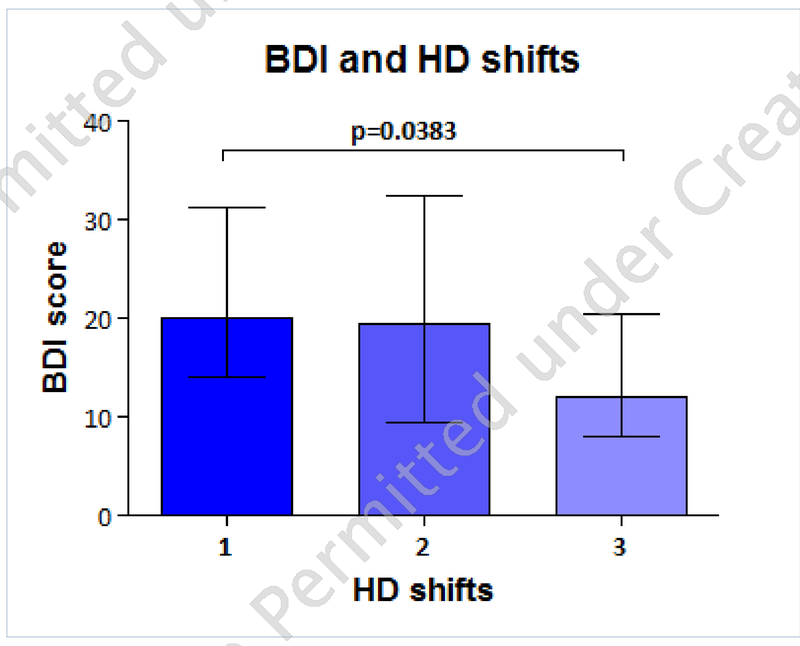

Fig 4: "Kruskal-Wallis" test revealed a statistical significant correlation (p=0.0383) regarding the BDI score and the different HD shifts.

Correlation	BDI	HADS A	HADS D	GAD-7	GDS
BDI	-	r=0.4494 p<0.0001	r=0.5742 p<0.0001	r=0.4150 p=0.0001	r=0.6397 p<0.0001
HADS A	r=0.4494 p<0.0001	-	r=0.7099 p<0.0001	r=0.4669 p<0.0001	r=0.3906 p=0.0003
HADS D	r=0.5742 p<0.0001	r=0.7099 p<0.0001	-	r=0.4661 p<0.0001	r=0.5331 p<0.0001
GAD-7	r=0.4150 p=0.0001	r=0.4669 p<0.0001	r=0.4661 p<0.0001	-	r=0.4729 p<0.0001
Nr dg	r=0.241 p=0.028	r=0.401 p=0.0002	r=0.296 p=0.0064	r=0.268 p=0.016	ns

Table 4: Pearson's R test showed a positive correlation in-between the different tests. Statistical analysis revealed correlations of the above scores-except GDS- with the number of daily prescribed medications.

There was no correlation of the various questionnaire scores with advanced sex, age, underlying renal disease, hemodialysis modality, hemodialysis duration, hemodialysis shift, using of central catheter, AVF or AVG, number of psychiatric drugs taken daily, Charlson Comorbidity Index CCI and cardiovascular co-morbidities, hypertension, heart failure COPD, the related bone – mineral metabolism parameters and anemia. Additionally, statistical analysis showed no significant differences between diabetic and non diabetic patients in all tests subcategories.

Conclusion

We found a high rate of depression and anxiety in CKD patients on HD.

The BDI, GDS, GAD-7 and HADS scores are simple and valuable diagnostic tools for the diagnosis of depression and anxiety in HD patients. Depression is highly prevalent in HD patients and a heavy load of daily prescribed medications, longer HD vintage and increased interdialytic weight gain are among the major predisposing factors.

These findings suggest less subjective well being in HD patients and need to be considered in the care of HD patients. Depression and anxiety are often under-diagnosed and untreated. Healthy care professionals must be aware of these differences in order to allow timely recognition and implementation of an appropriate therapeutic strategy

References

1. Hoffmann DL, Dukes EM, Wittchen HU. Human and economic burden of generalized anxiety disorder. Depress Anxiety. 2008;25:72-90
2. Feroze U. et al (2012) Anxiety and depression in maintenance dialysis patients : preliminary data of a cross-sectional study and brief literature review. J. Ren Nutr 22(1) 207-210