PERSONALITY PROFILES AND DEPRESSION IN HAEMODYALISIS PATIENTS

Pop-Jordanova N and Polenakovic M

Macedonian Academy of Sciences and Arts, Skopje, R. Macedonia

Abstract: Chronic haemodyalisis is an established treatment of end stage renal disease which maintains the lives of individuals who otherwise would have succumbed to a uraemic death.

However, this method of treatment raises certain psychological, social and ethical issues, where depression and stress are the most common.

This article is concerned with the evaluation of depression and the psychological characteristics of patients treated by chronic maintenance haemodyalisis. Using two psychometric tests (Beck Depression Inventory and MMPI-201) we obtained a significant incidence of depression (90.63%) in patients recruited from two centres for dialysis in Skopje, where even the severe form was unrecognized and untreated.

The psychological profiles confirmed hypersensitivity, depressive mood, frequent interpersonal problems, and withdrawal from friends and relatives. Latent aggressiveness could be destructive for their social communications.

In order to overcome the depression some response measures such as relaxation training, psychological support, music therapy or peripheral biofeedback are recommended.

Key words: haemodyalisis, depressions, personality profiles.

Introduction

During the past few decades haemodialysis has become an established treatment for end-stage kidney diseases worldwide. The use of long-term intermittent haemodialysis has become a successful treatment in maintaining the
lives of individuals who otherwise would have succumbed to a uraemic death. With dialysis chronic renal patients are sustained to have a more or less usual life and to be out of long-term hospitalization [1].

On the other hand, chronic maintenance haemodialysis has raised many psychosocial and ethical issues concerning to the quality of life, anxiety, depression, high price of the treatment, family problems, euthanasia, etc. [2–3] However, depression, stress and anxiety are the most frequently evaluated topics related to maintenance haemodyalisis [4–6].

A review of the literature on patients’ data reveals depression to be a common psychiatric co-morbidity of haemodialysis. The data show a wide range of incidence and severity of depression. Some authors have reported severe depression in more than 60% of patients, but in other studies depression was seen less frequently [1, 7–9].

In addition, chronic stress related to the process of dialysis commonly increases the level of depression. Both depression and stress are the main triggers for suicidal behaviour in these patients [10–12].

Although depression is common, it can frequently be an under-recognized and under-treated problem associated with increased mortality in end-stage chronic kidney patients [7, 13, 14]. Only a minority of these patients are treated with antidepressant medications or given pharmacologic therapy (exercise training regimens, music therapy, biofeedback, relaxation, etc). In this context any form of suitable treatment for depression in dialyzed patients must be implemented.

Depression is a complex disease process that can be understood as a spectrum of mood disorders from mild isolated symptoms without disability through to bipolar disorders. Major depression defined by the Diagnostic and Statistical Manual for Mental Disorders [15] is a clinical syndrome lasting at least two weeks and which represents a change from previous functioning, during which the patient experiences at least five of the following symptoms: depressed mood, markedly diminished interest or pleasure, significant weight loss or gain or appetite disturbance; insomnia or hypersomnia; psychomotor agitation or retardation; inappropriate guilt; diminished ability to think or concentrate or indecisiveness, or recurring thoughts of death, including suicidal ideation. In people with chronic kidney diseases, depression is associated with a poorer quality of life as well as lower survival.

The personality traits comprise innate or modified characteristics grouped within the categories of an individual's (1) attitudes, (2) miscellaneous attributes, (3) social endowments, and (4) skills. Each trait is shown in two ways; how it manifests itself in a positive way in a person, and how it manifests negatively in a person. Traits provide a comprehensive description of personality. In Fig. 1 we present some personality traits involved in the general psychological characteristics of a personality.
The aim of this study is to compare the level of depression and psychological profiles of patients in two centres for dialysis in Skopje.

Methodology and sample

Two psychometric instruments are used for the psychological evaluation of patients: Beck Depression Inventory and Minnesota Multiphasic Personality Questionnaire. The sample comprised two groups of patients on chronic maintenance dialysis: 1) 68 patients recruited from the Zelezara state dialysis centre and 2) 60 patients from the Diamed private centre for dialysis. Patients were matched by age, gender and duration of dialysis. For statistical evaluation the package Statistic 7 was used (descriptive methods and correlations).

The Beck Depression Inventory (BDI) is a multiple-choice self-report inventory for measuring the severity of depression. The original BDI was first published in 1961 by Aaron Beck, and consists of twenty-one questions about how the subject has been feeling in the last week. When the test is scored, the total score is compared to a key to determine the depression’s severity. The standard cut-offs are as follows: Score between 0–9 indicates minimal depression; 10–18 indicates mild depression; 19–29 indicates moderate depression and 30–63 indicates severe depression. This means that a higher score indicates more severe depressive symptoms.

The BDI has been shown to be valid and reliable, with results corresponding to clinician rating of depression in more than 90% of all cases [16–19].

Minnesota Multiphasic Personality Inventory (MMPI)-201 is an older variant of MMPI, standardized to the population of former Yugoslavia. We
chose this form because it is more suitable for chronic patients. It consists of 201 statements which can be rated as "correct" or "incorrect." Statements are grouped into 11 scales, and answers may be indicative of one or more of them. Three scales (L, F, and K) are the validity scales that measure the appropriateness and readiness of respondents for this type of testing (response bias): the L scale reflects rigidity or naiveté in respondents’ approach to the test material; the F scale shows confused thinking, lack of understanding of the material, or malingering; and the K scale reveals a lack of readiness to express one’s own characteristics and a tendency to provide socially acceptable answers. The remaining scales are the clinical scales: the Hs (hypochondriasis) scale shows narcissism of the body and hypochondriasis; the D (depression) scale indicative of depressive symptoms; the Hy (hysteria) scale shows convulsive symptoms; the Pd (psychopathic deviation) scale is specific for immaturity, impulsiveness, and asocial behaviour; Pa (paranoia) scale shows sensitivity and hostility; the Pt (psychasthenia) scale is indicative of anxiety and obsessive thinking; the Sc (schizophrenia) scale indicates confused and bizarre thinking; and the Ma (hypomania) scale shows euphoria and hyperactivity [20].

The interpretation of results of MMPI is based on a profile configuration rather than on an individual scale result. A general rule is that only the scales with T score $\geq 70$ are interpreted as significant. Control scales should satisfy some principal criteria for allowing the analysis of clinical scales. Namely, L must be $\leq 70$; F $\leq 80$ and K $\leq 70$ [21].

Results and discussion

Demographic characteristics of the evaluated two samples are presented in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Institution</th>
<th>Number of patients</th>
<th>Females</th>
<th>Males</th>
<th>Mean age (years) Females</th>
<th>Mean age (years) Males</th>
<th>Duration of dialysis (mean years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zelezara</td>
<td>68</td>
<td>30</td>
<td>38</td>
<td>56.5</td>
<td>62.3</td>
<td>6.68</td>
</tr>
<tr>
<td>Diamed</td>
<td>60</td>
<td>30</td>
<td>30</td>
<td>54.2</td>
<td>63.2</td>
<td>5.82</td>
</tr>
</tbody>
</table>

As is shown, two samples are similar by number, age, gender and the duration of dialysis.

Level of education is presented in Table 2.
Table 2

<table>
<thead>
<tr>
<th>Institution</th>
<th>University degree</th>
<th>High school</th>
<th>Elementary school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zelezara</td>
<td>11.3%</td>
<td>60.4%</td>
<td>28.3%</td>
</tr>
<tr>
<td>Diamed</td>
<td>10.8%</td>
<td>15.8%</td>
<td>73.4%</td>
</tr>
</tbody>
</table>

It is clear that patients recruited for Diamed are less educated than the other group. Generally, all tested patients have a satisfactory IQ and level of education to answer the necessary questions.

The results obtained with Beck Depression Inventory are presented in Table 3.

Table 3

<table>
<thead>
<tr>
<th>Institution</th>
<th>Minimal</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zelezara</td>
<td>21.43%</td>
<td>35.71%</td>
<td>17.85%</td>
<td>14.28%</td>
</tr>
<tr>
<td>Diamed</td>
<td>45.62%</td>
<td>26.12%</td>
<td>12.53%</td>
<td>15.73%</td>
</tr>
</tbody>
</table>

Obtained results confirm that depression is present at different levels in all patients. The more significant results are related to severe depression confirmed in 14.28% and 15.73% in patients from Zelezara and Diamed respectively. The obtained results are similar to results from other studies [16–20]. The incidence of depression in the general population in R. Macedonia is supposed to be 5.2%. It is very clear that the dialysed patients manifest a much higher incidence of depression than the general population, which is statistically significant (p < 0.001).

In USA the prevalence of depression in haemodialysis patients is around 15%, which is low in comparison to our results. These findings correlate with published data from different authors [5, 14, 22]. In a study by Sanavy and Afshar [22] frequency of depression in dialysis patients was 70%, and 26.7% of them suffered from severe depression. The authors do not find a correlation between age, gender, underlying disease, haemodyalisis duration and depression.

The correlation between depression and duration of the dialysis stage is presented in Fig. 2. It is clear that the stage of dialysis (calculated in years) negatively influences the level of depression (Correlation $r = -0.16$; $p = 0.32$). This finding could be interpreted as better adjustment to the situation in the course of the years passed on dialysis.
De Nour [12] published many years ago that the time around the initiation of dialysis treatment for end-stage renal disease was turbulent and did not reflect a stable, steady state. Depression is also more pronounced in the initial period of dialysis which correlates with our findings. Endurance of a debilitating medical illness and a time-intensive treatment over months and years may exact a price, especially in those less able to cope with such challenges.

We also calculated the correlation between the age of patients and depression (see Fig. 3)
The obtained data confirm that age significantly influences the development of depression (correlation $r = 0.33; p = 0.02$). It is well known that older persons much more often express bad mood, sadness, helplessness and fatigue, which are the most significant signs of depression.

Concerning educational level and depression, the obtained calculation shows only a small negative correlation which is not statistically significant ($r = -0.029; p = 0.072 (p > 0.05)$. However, higher education could help to find successful coping mechanisms more easily.

![Graph showing the correlation between depression and educational level](image)

**Figure 4 – Correlation between depression and educational level**

In general, this study confirmed that practically all patients on dialysis are depressed, but the level of depression is different. These findings imply the need for some response measures.

The results obtained with MMPI 201 are presented in Fig. 5 for females and Fig. 6 for males.

Obtained MMPI profiles for both samples are very similar. However, women from Zelezara showed a so-called pathological personality profile comprising Hs-D-Pa peaks with a $T$ score $\geq 70$. Personalities with this profile are recognized as hypersensitive, frequently manifesting interpersonal problems by refusing to accept close friends and relatives. These are sensitive-depressive structures with accentuated latent aggressiveness which restricts them in social relationships. They are very abusive and prone to paranoid interpretations. These psychosomatic reactions are possible an outcome of neurotic defence mechanisms.
The MMPI profiles obtained for men are also very similar in both samples. However, the profile obtained for the Zelezara sample is more specific and "pathological". These patients showed a typical bimodal D-Pa profile. Both peaks are above T-score $\geq 70$. The characteristics of personalities with this profile are related to hypersensitivity, depressive mood, frequent interpersonal problems, and withdrawal from friends and relatives. The latent aggressiveness could destroy their social communication. These personalities react with depression especially in stressful situations. The dominant mechanism of defence is projection used to overcome genuine inferiority. In this case (chronic illness and maintenance dialysis) it is logical that projection could mitigate the high level of anxiety. Very often these personalities could manifest some psychosomatic reactions (i.e. diabetes, obesity and allergy).

Figure 5 – MMPI profiles for females (unbroken line for Zelezara, dotted line for Diamed)
To resume, obtained MMPI profiles for both genders are very similar concerning hypersensitivity, depression and social withdrawal. In addition, defence mechanisms of the Ego could be a trigger for many psychosomatic reactions.

Cengic et al. [23] examined the so-called "neurotic triad" (hypochondria, depression and hysteria) obtained with MMPI-201 in 56 patients treated with haemodialysis. They showed in females a significantly higher level on some psychotic subscales (paranoia, schizophrenia and mania) in relation to the group of male patients. In addition, they showed more expressive paranoia in patients with only primary school education in comparison to patients with university education.
Burke [24] finds a profound fear of death and of helplessness as well as a sense of catastrophic loss of bodily functions by means of MMPI profiles in patients with renal dialysis in Veteran hospitals in comparison to Mayo Clinic general medical patients.

Because of the difficulty of medications prescription in these patients [25, 26], we propose some non-pharmaceutical treatments such as psychological support, relaxation training, music therapy, and some peripheral biofeedback modalities in order to reduce the level of stress. In many health centres in America and Europe personalized arts programmes provided through Arts in Medicine are included in the non-pharmacological treatment. These help to elevate the patient's sense of purpose, reduce anxiety and pain, facilitate a positive association with the hospital experience, connect patients with one another, and build a sense of community within the hospital. All these activities might not be vital for survival and may seem excessive, but these are qualities that make us more human. Our own experience with biofeedback modalities in the treatment of chronic patients is very positive [27–29].

Conclusions

Specific characteristics of personality for dialysed patients obtained with MMPI-201 are hypersensitivity, depressive mood, frequent interpersonal problems, and withdrawal from friends and relatives. Their latent aggressiveness could be destructive for their social communications.

The study confirmed the presence of a high incidence of depression in patients treated with haemodialysis in both samples. In comparison to the incidence of depression in the general population (5.2%) the incidence of depression in dialysed patients is statistically significantly higher.

The level of depression is variable, but a severe form was shown in 14, 28% and 15.73% of patients respectively. Depression can be under-recognized and it might be the reason for maladjustment and bad compliance.

Depression is positively correlated with age (p < 0.05) and educational level and negatively with the duration of dialysis.

Certain response measures for depression such as relaxation training, psychological support, music therapy or peripheral biofeedback are recommended.

Acknowledgment

The authors acknowledge doctors and nurses from both centres for dialysis (Zelezara and Diamed) for their help in obtaining psychometric data for dialysed patients.
REFERENCES


Резиме

ПСИХОЛОШКИТЕ ПРОФИЛИ И ДЕПРЕСИЈАТА КАЈ ПАЦИЕНТИТЕ НА ХЕМОДИЈАЛИЗА

Поп-Јорданова Н. и Поленаковић М.

Македонска академија на науки и уметности, Скопје, Р. Македонија

Хроничната хемодиализа е естаблирана метода во лекувањето на терминалната бубрежна болест, која овозможува продолжување на животот на болниите кои без неа би завршиле со уремична смрт.

Сепак, оваа метода предизикува психолошки, социјални и етички проблеми, меѓу кои најчесто се депресијата и стресот.

Студијата е посветена на евалуација на депресијата и психолошките характеристики кај пациентите на хронична хемодиализа. Користејќи два психометрички инструменти (Беков инвентор за депресија и Мултифазниот инвентор на личност од Минесота) покажавме дека депресијата е присутна кај испитуваните пациенти регрутирани од двата центри за дијализа во Скопје, при што дури и тешката депресија беше нераспознана и нелекувана.

Психолошките профили покажаа присуство на хиперсензитивност, депресивно расположение, чести интерперсонални проблеми како и избегнување на односи со семејството и пријателите. Латентната агресивност може да биде деструктивна за нивните социјални комуникации.

Со цел да се ублажи депресијата, препорачани се некои мерки како релаксационен тренинг, психолошка поддршка, музикотерапија и периферан биофибук.

Клучни зборови: дијализа, депресија, психолошки профил.

Corresponding Author:

Nada Pop-Jordanova,
Macedonian Academy of Sciences and Arts
1000 Skopje
R. Macedonia

E-mail: popjordanova.nadica@gmail.com