DEPRESSION AND SUICIDAL TENDENCY IN PATIENTS WITH CHRONIC RENAL FAILURE TREATED BY CONTINUOUS AMBULATORY PERITONEAL DIALYSIS AND HEMODIALYSIS


ABSTRACT

To investigate the prevalence of depression and suicidal tendency in patients with chronic renal failure (CRF) treated by continuous ambulatory peritoneal dialysis (CAPD) and hemodialysis (HD).

The patients were interviewed with Hamilton Depression Index (HAM-D) and a sociodemographic information questionnaire.

In HD group, almost all patients had different degrees of depression, but, in CAPD group, only 50% of patients were diagnosed as having depression. In general, the main complaint of HD patients and CAPD patients was somatic anxiety. Conclusion: Our results suggested that there is a strong positive correlation between HAM-D score and suicidal ideas, and somatic anxiety. Complaints related depression were more common in the HD group rather than the CAPD group.

Key Words: Depression, hemodialysis, peritoneal dialysis, suicidal ideas.

INTRODUCTION

Many psychiatric disorders can be seen in patients with chronic renal failure (CRF). Hemodialysis, which is a renal replacement treatment, causes various psychiatric and psychosocial problems. Patients become dependent on due to nature of treatment, this condition causes various problems in patients. In addition, strict diet and continuous treatment are other stress factors. (Yucel et al., 1994; Ozkan 1993; Rustomjee & Smith, 1996; Sensky et al., 1996).
Various studies were published in different regions and countries about the prevalence of depression and the relation between sociodemographic factors and depression in patients treated by continuous ambulatory peritoneal dialysis (CAPD), which has gradually become common in Turkey, however, to hold studies, which reflect our region, has become necessary. (Ozkan 1993; Lye et al., 1997; Liu, 1989; Rustomjee & Smith, 1996).

According to the result of studies in patients, who undergo dialysis, especially HD, the most common psychiatric disorder, which causes morbidity and mortality, is depression. To commit suicide frequently accompanies depression. According to studies from various countries that the prevalence of severe depression is 5-22% and mild/moderate depression is 17.7-25% in patients with CRF who undergo dialysis. (Lye et al., 1997; Liu, 1989; Rustomjee & Smith, 1996; Sensky et al., 1996).

It has been reported in recent studies in our country that 22.9 per cent of these patients have at least one psychiatric disorder and the most common psychiatric disorder is depression in these patients. (Yucel et al., 1994; Ozkan 1993; Sagduyu & Erten, 1998).

The purpose of this study is to investigate the prevalence of depression and suicidal tendency in patients with CRF treated by CAPD and HD.

MATERIALS and METHODS

Patients and study design

This descriptive study included 52 HD patients (30 M, 22 F) and 26 patients (15 M, 11 F) treated by CAPD in HD Center of Dicle University, during the period from August to October 1999. Diyarbakir is located in Southeast of Turkey. Population is around 500,000. The University Hospital, in which study was conducted, has about 1,200 beds with all specialties. Our renal dialysis center started its function since 1998. The patients were evaluated according to Hamilton Depression Index (HAM-D) and sociodemographic factors. Hamilton Depression Scale (HAM-D) was developed to determine the level of depression and the severity of symptoms, and it should be scored by the interviewers. There are 3 different indices, which contain 17, 21 and 24 questions. The index, which contains 17 questions, was used in this study. (Hamilton, 1960; Williams, 1988). All patients received a full physical and psychiatric examination at commencement of the study. All patients gave full informed consent and ethical committee approval was obtained at both a regional and national level. There is no patient who uses antidepressants; neuroleptics or anti-convulsive drugs at the beginning of the study, the patients who have more than 13 points in HAM-D had been treated by our psychiatry clinic.

Hemodialysis

The patients received 5 hour and three times per week HD with a low-flux PS hollow fiber disposable dialyser (Fresenius Medical Care, Germany) and dialysers were never reused. HD was carried out using Braun-Dialog and Fresenius-4008S (Germany) dialysis machines and bicarbonate as dialysate. All patients were receiving heparin (low molecule weight heparin). Machines
were heat disinfected between treatments and chemically every month.

**Continuous ambulatory peritoneal dialysis**

Most CAPD patients were prescribed four 2-liter exchanges daily. A minority was treated with four 1.5-liter exchanges daily if they couldn't tolerate 2 liters in the peritoneum. All patients received peritoneal dialysis via a Tenckhoff coil catheter. CAPD patients used a Baxter's Ultra Bag system (Baxter Healthcare Corp., USA) or Fresenius' Freedom Y-set system (Fresenius Medical Care, Germany).

**Statistical Analysis**

It has been done with SPSS 7.5 Computer Program. To compare categorical variations, Chi-square test, to compare two independent groups, t-test were used and in correlation analysis, Pearson correlation test was used. Results are expressed as mean±SD. A p value <0.05 was considered statistically significant.

**RESULTS**

The average CAPD period was 17.1±9.5 months and the average age was 40.8±12.4 years in CAPD patients who were included in our study. The HAM-D score average was 96 points. In HD patients, these figures were 18.4±11.7 months, 43.8±16.7 years and 126 points, (p>0.05, p>0.05 and p<0.05), respectively (table 1). Whereas in the HD group; the majority of patients were diagnosed as having depression in various degrees (42 patients, 80.8%), in CAPD group only 50% of patients were diagnosed as having depression (13 patients, 50%) (Fig. 1a and 1b). The demographic information is demonstrated in Table 2. There is no difference in gender (p>0.05). The prevalence of depression in the HD group is more than the CAPD group (p=0.01).

![Figure 1a. The distribution of cases according to severity in HD group.](image-url)
Figure 1b. The distribution of cases according to severity in the CAPD group.

Table 1. The average age, HAM-D score, CRF and CAPD period.

<table>
<thead>
<tr>
<th>Mean±SD</th>
<th>CAPD</th>
<th>HD</th>
<th>p</th>
<th>%95 CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=26</td>
<td>n=52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (Year)</td>
<td>40.8±12.4</td>
<td>43.8±16.7</td>
<td>&gt;0.05</td>
<td>-3.79; 9.64</td>
</tr>
<tr>
<td>HAM-D Score</td>
<td>96</td>
<td>126</td>
<td>=0.03</td>
<td>0.29; 6.28</td>
</tr>
<tr>
<td>Dialysis Period (Month)</td>
<td>17.1±9.5</td>
<td>18.4±11.7</td>
<td>&gt;0.05</td>
<td>-4.28; 6.96</td>
</tr>
</tbody>
</table>
Table 2. Demographic informations.

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>CAPD (n)</th>
<th>HD (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>20</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td>21-30</td>
<td>4</td>
<td>15.4</td>
</tr>
<tr>
<td>31-40</td>
<td>6</td>
<td>23.1</td>
</tr>
<tr>
<td>41-50</td>
<td>7</td>
<td>26.9</td>
</tr>
<tr>
<td>51</td>
<td>7</td>
<td>26.9</td>
</tr>
<tr>
<td>GENDER</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>57.7</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>42.3</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>100</td>
</tr>
</tbody>
</table>

There is a positive correlation between retardation and lack of activity, and also a positive correlation between HAM-D score and lack of activity ($r=0.68$, $p<0.0001$ and $r=0.53$, $p<0.0001$, respectively) and a moderate positive correlation between HAM-D score and suicidal ideas ($r=0.39$, $p=0.004$). A positive correlation between HAM-D score and psychic anxiety has been found in HD patients ($r=0.58$, $p<0.0001$). In the CAPD group, there were a strong positive correlation between HAM-D score and suicidal tendency ($r=0.77$, $p<0.0001$), and a moderate positive correlation between HAM-D score and psychic anxiety ($r=0.47$, $p<0.01$).

DISCUSSION

A higher prevalence of depression has been reported in CRF patients than normal population, in various studies, which use different depression indices. (Craven et al., 1987; O'donnell & Chung, 1997; Lye et al., 1997). Major depressive disorders are common in these patients, however, to diagnose them is difficult and many organic symptoms mimic depressive symptoms. It has been reported that HD patients cannot work continuously and in full capacity after beginning HD program. In addition, this progress causes financial problems, especially in patients who have not medical insurance. Moreover, the relations within the family can be affected by these financial problems. Reduced energy, loss of libido and psychomotor retardation can be seen as predisposing factors to depression and as the result of depression. (Kimmel, 1993; Craven et al., 1987; O'Donnell & Chung, 1997).

Lye et al., (1997), carried out a study into CAPD patients (n=30), in Singapore. Hospital Anxiety and Depression Scale (HAD-C) was used and depression prevalence was found as 13%. According to sociodemographic information of patients, the average age was 54.214.1 years, M/F rate was $\Omega$, the average CAPD period was 22.38.3 months; 93 per cent of patients accepted
Their psychiatric disorders, 43 per cent of patients suffered from helplessness; the main anxiety sources were economic problems (83%), loss of libido (73%) and unemployment (67%). The prevalence of depression was reported as 56.3% in another study, which were carried out in CAPD patients with using HAM-D scale and DSM-IV criteria. Higher HAM-D scores were found in 18 CAPD patients; it was proposed that; genetic, psychosocial and neurobiological factors affect onto depression level in these patients (Liu, 1989). On the other hand, DSM-IV criteria were inadequate to assess lower scored cases and patients with organic diseases. Therefore, a more specific diagnostic guide is required.

According to demographic information (Table 1, and 2), in the HD group male/female rate is 3.0/1.1; the average age 40.8±12.4 years, the average dialysis period is 17.1±9.5 months. In comparison with Lye’s study (Lye et al., 1997), our patient group is a younger population. As can be seen from the table 1, the number of HD patients, whose ages less than 50 years, is 32 (61.5%); whereas, in CAPD group (n=26), the number of patients, whose ages less than 50 years is 19 (73.1%), 17 cases are between 20 and 50 years old. In the HD group (n=52), 11 patients (21.2%) had severe depression, 10 patients (19.2%) had moderate depression, and 21 patients (40%) had mild depression. However, 10 patients (19.2%) diagnosed as not having depression (Fig. 1a). In the CAPD group (n=26), 2 patients (7.7%) diagnosed as having severe depression, 3 patients (11.5%) had moderate depression, 8 patients (30.8%) had mild depression; whereas, 13 patients (50 %) were diagnosed as not having depression (Fig. 1b). The depression prevalence (50%), which has been found in CRF patients treated by CAPD, is higher than that of Lye’s study (13%) (Lye et al., 1997), in which HAM-C was used; but, lower than that of Liu’s study (56.3%) (Liu, 1989), in which HAM-D was used.

The following symptoms can be used to distinguish patients with depression from these without depression: depressed mood, loss of interest, slowing of thought, pessimistic thoughts (guilt, self-blame and suicide), and lack of appetite and weight loss. Whereas, it has been proposed that fatigue, sleep disturbance and loss of libido are less important in diagnosis. (O’Donnell & Chung, 1997; Sacks et al., 1990; Sklar et al., 1996)

According to Sagduyu and Erten’s study from Turkey in 1998; which was carried out in HD patients, the following symptoms can be observed on more than 50% of patients diagnosed as having depression: delay in falling asleep (83.3%), fatigue (75%), loss of libido (75%), depressed mood (66.7%), early morning waking and waking during sleep (58.3%).

In the HD group of our study, the average HAM-D score is 126; the majority of patients (42 patients, 80.8%) have depression at various levels. But, in the CAPD group the average HAM-D score is 96; only 50% of patients (13 patients) have depression. Prevalence of depression in the HD group is higher than CAPD group statistically significant (p=0.01) and there is no difference in gender (p>0.05).

According to the latest official figures released by WHO and the individual National Bureau of Statistics, the suicide rates among the countries differ
widely. Nordic and Eastern European countries (Europe average: 30.0% in male, 8.2% in female) also have somewhat higher suicide rates, while the southern parts of Europe and Turkey (1997: 3.8% in male, 2.4% in female) have comparatively low suicide rates. America and Asia generally have lower rates than most of the European countries. (Schmidtke et al., 1999). The most important psychological problems in patients who undergo dialysis are depression and suicide. (Kimmel, 1993). The suicide risk is 15 times more than general population in these patients. 1/500 of them commit suicide. According to a multi-centre study, higher-level psychic anxiety increases the suicide risk in depressive patients. (Schatzberg, 1995).

According to our study, in general, out of total number of patients (n=52), somatic anxiety (48 patients, 92.3%), general somatic symptoms (41 patients, 78.8%), and waking during sleep (34 patients, 65.4 %) are evident in the HD group. 20 patients (38.5%) have suicidal ideas, however, there is no patient, who committed suicide. Positive correlation between retardation and lack of activity; also between HAM-D score and lack of activity were found (r=0.68, p<0.0001 and r=0.53, p<0.0001, respectively). A positive correlation between HAM-D score and suicidal ideas is found (r=0.39, p=0.004). In the HD group, there was a strong positive correlation between psychic anxiety and HAM-D score (r=0.58, p<0.0001).

However, in the CAPD group (n=26), somatic anxiety (20 patients, 76.9%), general somatic symptoms (16 patients, 61.5%), agitation, depressive mood and psychic anxiety (14 patients, 53.8%) are evident. 26.9% of patients had suicidal ideas, and one patient committed suicide. In the CAPD group, a strong positive correlation between HAM-D score and suicidal ideas (r=0.77, p<0.0001), and a moderate linear association between HAM-D score and psychic anxiety are found (r=0.47, p<0.01).

In conclusion, our results suggested that there was rather strong positive correlation between HAM-D score and suicidal ideas, and somatic anxiety is the main symptom in both HD and CAPD groups. Depression is more common in the HD group rather than the CAPD group.
SÜREKLI AYAKTAN PERİTON DIALİZİ VE HEMODİALİZ İLE TEDAVI EDİLEN HASTALARDA DEPRESYON VE İNTİHAR EĞİLİMİ

Sürekli ayaktan periton dializi (SAPD) ve hemodializ (HD) ile tedavi edilen kronik böbrek yetmezliği (KBY) hastalarında depresyon sıklığı ve intihar eğilimini araştırmak.

Hastalar, Hamilton Depresyon İndeksi (HAM-D) ve sosyodemografik faktörlerine göre değerlendirildi.

Hemodializ hastalarının %80,8’inde yüksek depresyon skorları saptanırken, SAPD hastalarında bu oran %50 olarak bulundu. Genel olarak hemodializ ve SAPD hastalarında temel şikayet somatik anksiyete idi. Her iki grupta da HAM-D skorları ile intihar düşünceleri arasında güçlü bir pozitif bağlantı saptandı.

Depresif şikayetler hemodializ grubunda SAPD grubundan daha sıklıkla gözlenir. Her iki grupta da temel şikayet somatik anksiyetedir.

Anahtar Kelimeler: Depresyon, hemodializ, peritoneal dializ, intihar düşünceleri.

REFERENCES


