Psychological characteristics in maintenance hemodialysis patients

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ABSTRACT

Objective: To investigate the psychological characteristics in maintenance hemodialysis (MHD) patients.

Methods: Ninety-two MHD patients from six dialysis centers were studied. Three psychological rating scales were used: Symptom Check List 90 Rating (SCL-90-R), Multidimensional Health Locus of Control (MHLC), and Eysenck Personality Questionnaire (EPQ). Quality of life assessment specific for end-stage renal disease (ESRD) was also included in the survey. The results were compared with data from hemodialysis (HD) centers in the United States and Canada.

Results: Of the MHD patients, 39.1% had at least one elevated score of psychological symptoms. Compared with patients in the United States, the overall psychological disturbance, particularly with anxiety, was significantly higher in Chinese patients (p < 0.01). As in the United States, Chinese HD patients showed higher scores for the "powerful others" of Health Locus of Control than normal individuals (p < 0.01). However, "chance externality" of Health Locus of Control was not significantly elevated in our patients. There was a significant correlation between emotional instability and psychological symptoms in SCL-90-R (p < 0.01). Chance externality was found significantly correlated with the SCL-90-R dimensions (p < 0.01). Education (in years) was found inversely correlated with chance externality dimension. The results also showed that our HD patients had a higher prevalence of somatopathic symptoms than Canadian patients (p < 0.01). The objective quality of life was lower in Chinese than Canadian patients, but the overall life satisfaction scores were similar.

Conclusions: Chinese HD patients had more psychological disturbance and a lower quality of life than the American and Canadian patients. Attention to psychological characteristics could result in better somatic and psychological health of dialysis patients and improved quality of life.

Key words: Hemodialysis, Psychological characteristics, Quality of life

中文摘要

目的：研究維持性血液透析病人的心理特徵。

方法：調查了六個透析中心的92名維持性血液透析病人。我們採用了三個心理測試量表：症狀自評量表(SCL-90-R)、多維度健康狀況心理控制源表(MHLC)、艾森克個性問卷(EPQ)；而末期腎衰竭病人專用的生活質量調查問卷也在內；並把所得之結果與美國及加拿大的同類研究進行了比較。

結果：在92名維持性血液透析病人中，39.1%至少有一項以上心理因子分超過陽性標準。與美國的同類
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INTRODUCTION

Somatic and psychological symptoms relating to quality of life are commonly seen in patients on dialysis. These patients are burdened with hardships not only from the underlying disease, but also from the treatment that yields little hope of cure. Psychological studies on dialysis patients have become an important branch of psychology in the western countries. Many reports, used a large number of different psychometric instruments documented a high incidence of psychopathology in dialysis patients. The illness, as well as the treatment, create significant psychological stresses for hemodialysis (HD) patients (1). Depression and anxiety were the most common and severe psychological disorders (2,3). Another important concern was their propensity for denial (1). For nephrologists nowadays, one important goal is to understand the patients’ somatic and psychological symptoms and to probably channel their stresses. While maintenance HD (MHD) has been used in China for over 20 years, assessment of patients’ psychological health has never been previously carried out. The aim of this study is to investigate the psychological traits of Chinese HD patients.

METHODS

Patients

Ninety-two MHD patients from six HD centers in Beijing were studied. Thirty other HD patients were excluded because of illiteracy, poor eyesight, critical condition or history of psychosis.

Methods

Each patient was assessed by interview by a single doctor while on dialysis. A unified set of instructions and criteria of assessment were enforced. Three psychological rating scales and one questionnaire on quality of life specific for end-stage renal disease (ESRD) were used. The Symptom Check List 90 Rating (SCL-90-R) is a widely accepted symptom checklist. It consists of a 90-item self-report measure of psychological symptoms, including a total of nine dimensions which are somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid and psychoticism (5). The Multidimensional Health Locus of Control (MHLC) is an 18-item self-report measure of health locus of control. There are three dimension scores: internality, powerful others and chance externality, which are used to analyze the relevant causes of psychological disturbances (6). The instrument is designed to characterize the locus of control as some researchers suggested that "control" is a potentially important etiologic factor in psychological complications of dialysis treatment. Both SCL-90-R and MHLC are well-validated and generally recognized to reflect patients’ psychological characteristics and to some extent, the underlying causes (2,3). The Eysenck Personality Questionnaire (EPQ) (4) is an 88-item self-report measure of characteristics of personality (revised version by Yaxian Gong). It includes four dimensions: nervousness, introversion or extraversion, psychopathic diathesis, and tendency to gloss over real situations. It was used to examine the relationship between individual characteristics and psychological disturbances and the authenticity of the questionnaires.

The quality of life assessment specific for ESRD consisted of four aspects: somatic symptoms, affective symptoms, subjective quality of life and objective quality of life (7). All the rating scales were translated to Chinese by Chinese psychologists. The results were compared with data obtained from HD centers in the United States (3) and Canada (2) using the same rating scales.

Statistics

Data were expressed as mean ±SD. Comparison between groups for continuous variables was made by 2-tailed t test and by $\chi^2$ test for rate. Correlation analysis was used to study the relationships between psychological characteristics and other factors.

RESULTS

Ninety-two patients were included in the study, of which
58.4% were male. The mean age was 51 ±15 years (ranged from 20-78 years). Duration on HD was 23 ±22 months (ranged from 1-87 months). The average educational level was 9.6 ±0.3 years with a range of 5 to 14 years (Table 1).

Psychological Assessment

SCL-90-R

Of the 92 patients, 36 (39.1%) had at least one elevated score. Symptoms of anxiety was detected in 14 patients (15.2%) and depression in 11 (12%). Fourteen patients (15.2%) had significant elevation of two or more of the clinical scales and 20 (21.7%) had elevation of only one. When compared with patients in the United States (3) the overall incidence of psychological disturbance, and in particular with anxiety, were significantly higher in Chinese patients (p < 0.01) (Table 2).

MHLC

As in the United States, Chinese HD patients showed higher scores for the powerful others of health locus of control than normal (p < 0.01) (8). On the other hand, chance externality was not significantly elevated (Table 3).

Table 1. Demographic data.

<table>
<thead>
<tr>
<th></th>
<th>Chinese HD</th>
<th>USA HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>92</td>
<td>90</td>
</tr>
<tr>
<td>Age (years)</td>
<td>50.9 ±14.7 (20-78)</td>
<td>55 (20-81)</td>
</tr>
<tr>
<td>Male (%)</td>
<td>58.7</td>
<td>58.5</td>
</tr>
<tr>
<td>Duration of HD (months)</td>
<td>23.2 ±21.9 (1-87)</td>
<td>37 (1-150)</td>
</tr>
<tr>
<td>Education (years)</td>
<td>9.6 ±20.3 (5-14)</td>
<td>10 (0-18)</td>
</tr>
</tbody>
</table>

Table 2. The prevalence of psychological disturbance in Chinese and USA HD patients.

<table>
<thead>
<tr>
<th></th>
<th>Chinese HD (%) (n = 92)</th>
<th>United States HD (%) (n = 90)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatization</td>
<td>26</td>
<td>5.5</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Anxiety</td>
<td>15.3</td>
<td>5.5</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Depression</td>
<td>12</td>
<td>10</td>
<td>NS</td>
</tr>
<tr>
<td>Hostility</td>
<td>10.9</td>
<td>4.5</td>
<td>NS</td>
</tr>
<tr>
<td>Phobic anxiety</td>
<td>10.9</td>
<td>7.7</td>
<td>NS</td>
</tr>
<tr>
<td>Obsessive-compulsive</td>
<td>10.9</td>
<td>5.5</td>
<td>NS</td>
</tr>
<tr>
<td>Psychotism</td>
<td>8.7</td>
<td>4.5</td>
<td>NS</td>
</tr>
<tr>
<td>Interpersonal sensitivity</td>
<td>5.5</td>
<td>5.5</td>
<td>NS</td>
</tr>
<tr>
<td>Paranoid ideation</td>
<td>4.3</td>
<td>2.3</td>
<td>NS</td>
</tr>
</tbody>
</table>

Table 3. MHLC profile of HD patients.

<table>
<thead>
<tr>
<th></th>
<th>Chinese HD (n = 92)</th>
<th>Normal</th>
<th>p</th>
<th>USA HD (n = 90)</th>
<th>Normal</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHLC</td>
<td>21.72 ±5.01</td>
<td>23.86 ±9.63</td>
<td>NS</td>
<td>25.94 ±6.55</td>
<td>25.55</td>
<td>NS</td>
</tr>
<tr>
<td>CHLC</td>
<td>15.08 ±5.3</td>
<td>15.45 ±3.99</td>
<td>NS</td>
<td>20.71 ±7.85</td>
<td>16.21</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>PHLC</td>
<td>25.23 ±4.34</td>
<td>22.77 ±4.82</td>
<td>&lt;0.01</td>
<td>26.49 ±6.84</td>
<td>19.16</td>
<td>&lt; 0.01</td>
</tr>
</tbody>
</table>

Abbreviations: MHLC = Multidimensional Health Locus of Control; IHLC = Internality of Health Locus of Control; CHLC = Chance Externality of Health Locus of Control; PHLC = Powerful Others of Health Locus of Control

Personality, MHLC and Psychological Disturbance

There was a significant correlation between emotional instability and certain parameters of psychological disorders in SCL-90-R (p < 0.01). Chance externality significantly correlated with the SCL-90-R dimensions (p < 0.01). Education (in years) correlated inversely with chance externality dimension (r = -0.3054, p < 0.01). It indicated that patients with low educational levels tend to believe that their health is decided by fate and chance. This was in accordance with the report from the United States.

Quality of Life

Compared with Canadian patients, Chinese HD patients had a higher prevalence of the following symptoms: tiredness, pruritus, sleep disturbance, headaches and nausea (p < 0.01) (2). The objective quality of life was lower (7.35 ±1.64 vs 8.10 ±1.21, p < 0.01) in Chinese than that of Canadian patients, but the overall life satisfaction scores were similar (5.12 ±1.61 vs 4.90 ±1.21, p > 0.05) (Table 4).

DISCUSSION

Previous studies using different psychometric methods have documented a high incidence of psychopathology in dialysis patients (9-12). These are often strongly associated with somatic symptomatology (2,11). In this study the prevalence of psychological disturbance in Chinese HD patients was higher than in the United States. This may be attributed to a number of factors including differences in economic conditions, dialysis adequacy...
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and social support. Psychological disorders were also associated with abnormally low quality of life. It is also interesting to see that there was no significant difference in the index of overall life satisfaction between Chinese and Canadian HD patients despite more psychological disturbances and lower quality of life in Chinese patients. In China, not all patients with uremia have the opportunity to be treated by dialysis. The general expectation of life quality may be related to the traditional ideas and customs and is usually lower than the western counterpart.

The data provided by the MHLC suggested that HD patients tend to believe strongly the powerful influence of others (such as doctors) in their own health. This suggests that patients tend to co-operate with doctors to obtain better medical care. Hence, diet and fluid restrictions might be better complied with (13,14). On the other hand, patients feeling controlled by external forces might experience a sense of helplessness and develop anxiety or other psychological distress. Psychological state is the collective reflection of culture, education and values of the society. An antagonistic feeling toward psychological testing was found in some HD patients. It might be due to the fact that the present psychological study did not satisfy the needs of these patients and that they did not benefit from that. Furthermore, patients with psychological disorders or mental problems were thought to be face-losing and this precludes them from seeking medical assistance.

The rating scales we used were borrowed from the western countries. As a result of the differences in race and culture, some of the contents may not be suitable for Chinese. The complexity of human psychology obligates a multi-dimensional approach and this study is just an initial attempt. In the long run, we should develop our own psychological rating scales in order to better understand the psychological characteristics of Chinese patients. Health is a state of complete physical, mental and social well being and not merely the absence of diseases and infirmity. Psychological studies in dialysis patients have begun in China. Attention to psychological assessment could result in improved somatic and psychological health and thus improve quality of life in our patients.

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REFERENCES