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Pruritus in Haemodialysis Patients and its Relation to Depression, Sleep Quality, Compliance with Therapy and Some Demographical Data

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Abstract

Background. Some of the most frequent and severe symptoms caused by chronic kidney failure (CKF) are pruritus, depression and sleep disorders. The aim of this study was to evaluate location, frequency and intensity of pruritus in haemodialysis (HD) patients (pts) in our Centre and to correlate it with appearance of depression, sleeping problems, compliance with therapy and some demographical data such as sex, age, marital status and HD duration.
Methods. Hundred HD pts participated in our study. 65 of them represented so called "pruritic group", and 35 the "non pruritic group". The mean age of the whole cohort was 52.03±11.41 years. The mean HD duration was 68.02±54.89 months. Some demographical characteristics of pts, pruritic data and information about pt's compliance with therapy we obtained through the short self reported questionnaire. For an examination appearance of depression (including sleeping problems), we applied the HAMD-17.
Results. The most of pruritic pts suffer from moderate (40%), 3 x per week or persistent pruritus (38,5%) localized on the back (39,6%). Pruritic pts expressed significantly higher level of clinically relevant depression, sleeping problems, somatic symptoms and hypochondria in relation to the non pruritic pts ($p<0.05$). Between pts who gave positive response on question whether pruritus has influence on their sleep quality (SQ), 97.1% of them responded to have some degree of clinically relevant depression. As the pts were more depressed and had less HD duration, they were significantly less compliant with their therapy ($p<0.05$).
Conclusions. Pruritus symptoms are positively associated with longer HD duration, the presence of clinically relevant degrees of depression, poor SQ and bad compliance with therapy.

Keywords: pruritus; haemodialysis; depression sleep quality; compliance with therapy; demographical data

Introduction

Pruritus or renal itching is one of the most common and often intolerable conditions caused by chronic kidney failure (CKF). Many haemodialysis (HD) patients (pts) (60-85%) complain of pruritus, with different location, intensity and frequency [1]. Pruritus usually begins about six months after the start of dialysis and it is often worse during or just after HD treatment [2]. Studies have shown that moderate to extreme pruritus symptoms and somatic symptoms in general are often positively associated with longer HD duration, the presence of clinically relevant degrees of depression or anxiety, poor sleep quality (SQ) and bad compliance with therapy [3,4].

Depression is the most frequent psychiatric disorder in HD pts. All HD pts find themselves dependent on a HD procedure and medical staff and besides this they are exposed to bigger or less changes in personal, social and professional life [5]. Before diagnosing of depression, it is imperative to exclude uremia, since the symptoms of depression and those originating from a somatic process are similar: chronic fatigue, weakness, changes in appetite sleeping problems and sexual problems [6]. Active suicide of HD pts is very rare, but passive one brought on by poor compliance with therapy and diet's regime or shortening and skipping treatments are not [5]. Depression may influence on pt's SQ and compliance with medical therapy [4].

Sleeping problems are common problems among HD pts. Theories about causes of these problems include: pruritus, "restless legs syndrome", depression, anxiety, excessive sleeping during or after HD, daytime napping, uremic toxicity, bone problems etc. [7].
Noncompliance with therapy is believed to be most common for dialysis pts in their use of phosphate binders, which must be taken 3 or 4 times daily, often in doses of 1 or more pills [8].
Social support - marital relationship, as the most frequent form of social support, can be a source of strength, consolation and an important factor in the pt's adjustment to HD [9]. The most of HD pts who perceived adequate family support, are less depressed and have better compliance with their medical therapy [10,8].

The aim of this study was to evaluate location, frequency and intensity of pruritus in HD pts in our Centre

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and to correlate it with the appearance of depression, sleeping problems, compliance with therapy and some demographical data such as sex, age, marital status and HD duration.

Patients and methods

Study design and patients - 100 pts from the Centre for haemodialysis at Clinical Center in Sarajevo participated in our study. 65 of them represented the so called "pruritic group" and 35 of them the "non pruritic group" of pts. The mean age was 52.03±11.41 years. The mean HD duration was 68.02±54.89 months. All pts were psychologically examined by explorative interview regarding demographical data and pre-dialysis psychological status of pts. Pruritus data (frequency, intensity and location of pruritus), data about pt's SQ and compliance with the pruritic therapy were obtained through the short questionnaire. For an examination appearance of depression, we applied Hamilton Depression Index (HAMD - 17), shorten version of questionnaire.

Statistical analysis - Student's T-test and χ^2 test were used for statistical analysis. The most of data were displayed as frequencies and percentage. A p value of <0,05 was considered statistically significant. Statistical analysis was carried out using the softwer of SPSS release 13.

Results

Pruritic and not pruritic pts were compared as for the demographical data, appearance of depression, SQ and compliance with pruritic therapy.

The differences between pts with different severity of pruritus in relation to demographical data, compliance with therapy, SQ and appearance of depression were not significant (p>0,05). The majority of the pruritic pts suffer from moderate, 3 x per week or persistent pruritus localized on beck.

Table 1. Demographic characteristics of the pruritic and non pruritic patients

		Number of patients (%)
Sex	m	50 (50%)
	f	50 (50%)
Age	20 – 45 years	25 (25%)
	45 – 65 years	75 (75%)
Marital status	Married	65 (65%)
	Single	35 (35%)
HD duration	0 – 3 months	6 (6%)
	3 – 12 months	12 (12%)
	1 - ... years	82 (82%)

Table 2. Severity of pruritus

		Number of patients N (%)
Intensity of pruritus	Mild	21 (32,3%)
	Moderate	26 (40%)
	Severe	18 (27,7%)
Frequency of pruritus	1 x per month	5 (7,7%)
	1 x per week	10 (15,4%)
	3 x per week	25 (38,5%)
	Persistent	25 (38,5%)
Location of pruritus	head and neck	15 (23,7%)
	Limbs	6 (9,4%)
	Back	26 (39,6%)
	Generalized	18 (27,3%)

Table 3. Compliance with pruritic therapy

		Number of patients N (%)
"Are you taking your phosphate binders as prescribed?"	No, I don't	12 (12%)
	I often skip	9 (9%)
	I rarely skip	31 (31%)
	Yes, I do	48 (48%)
"Reasons for noncompliance with therapy?"	I'm taking too many pills	30 (30%)
	The pills are expensive	10 (10%)
	It doesn't help me	30 (30%)
	I forget to take it	30 (30%)

Table 4. Differences between pruritic and non pruritic patients in relation to other variables

	Number of pruritic patients (N=65)	Number of non pruritic patients (N=35)	p
Sex *(m/f)*	35 (53,79%)/ 30 (46,21%)	15 (42,89%)/ 20 (57,11%)	p>0,05
Age *(years)*	53,02±11,21	51,33±10,56	p>0,05
Marital status *(married/singles)*	23 (35,38%)/ 42 (64,62%)	24 (68,57%) 11 (31,43%)	p<0,05
HD duration *(months)*	70,06±55,72	66,21±52,66	p<0,05
SQ	34 (52,31%)	18 (51,43%)	p>0,05
Depression *(HAMD total)*	55 (84,62%)	22 (62,86%)	p<0,05
Difficulty of falling asleep *(HAMD 4)*	53 (81,54%)	21 (60,0%)	p<0,05
Frequent awakening during the sleep *(HAMD 5)*	51 (78,46%)	19 (54,29%)	p<0,05
Somatic symptoms *(HAMD 13)*	52 (80,0%)	18 (51,43%)	p<0,005
Hypochondria *(HAMD 15)*	35 (53,85%)	18 (51,43%)	p<0,005

Pts undergoing HD more than 1 year, complained on pruritus significantly more frequently than those being on HD less than 1 year (p<0,05). Singles complained on pruritus significantly more frequently in comparison to the married pts (p<0,05). Pts undergoing HD more than 1 year, complained on pruritus significantly more frequently than those being on HD less than 1 year (p<0,05). Singles complained on pruritus significantly more frequently in comparison to the married pts (p<0,05).

Pruritic pts expressed significantly higher level of depression in relation to the non pruritic pts (p<0,05). 69,2% of pruritic pts suffered from mild, 12,3% from moderate and 3,1% from severe depression. Mild depression was found most frequently in both pruritic and non pruritic pts (Figure 1).

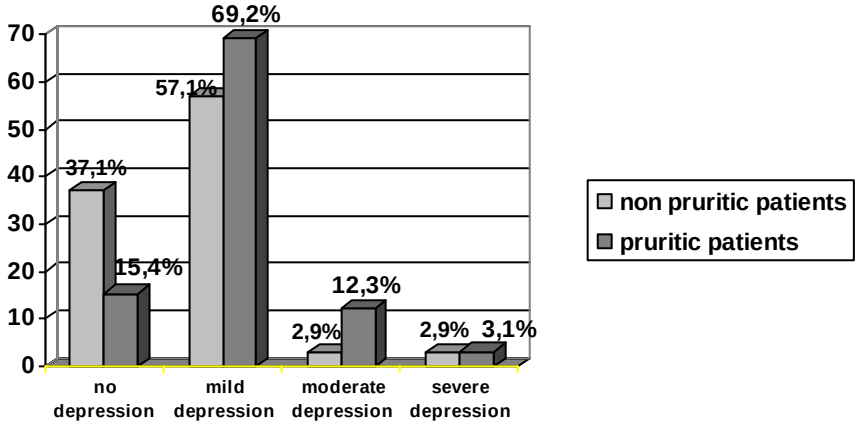

Fig 1. - The differences in appearance of clinically relevant levels of depression between pruritic and non pruritic HD patients

There was highly significant difference between pruritic and non pruritic pts in four items of HAMD: HAMD 4 - "Difficulty of falling asleep" ($p<0,05$), HAMD 5 - "Frequent awakening during the sleep" ($p<0,05$), HAMD 13 - " Somatic symptoms" ($p<0,005$) and HAMD 15 - "Hypochondria" ($p<0,005$). All symptoms were significantly more frequently expressed in the pruritic group of pts.

In addition to the level of pt's depression which was higher, their level of SQ was significantly lower ($p<0,05$). Between pruritic pts who gave positive response on the question whether pruritus have influence on their SQ, 97,1% of them responded to have some level of clinically relevant depression.

The differences between pts with different compliance with their pruritic therapy in relation to sex, age and SQ were not significant ($p>0,05$). But, since the pt's HD duration was longer, the pts were significantly more compliant with their therapy ($p<0,001$). Relation between appearance of depression and compliance with therapy was highly significant too ($p<0,05$). 50% of pruritic pts, who suffer from moderate depression, did not take their pruritic medication at all.

Discussion

The prevalence of pruritus in our HD Centre (65%) was in accordance with other literature reports [1]. The most of the pruritic pts in our study suffer from moderate, 3 x per week and persistent pruritus localized on the back (Table 2). Pisoni *et al*. reported similar results [4].

Results of our study have shown that pruritus symptoms are positively associated with longer HD duration, the presence of clinically relevant degrees of depression, poor sleep quality (SQ) and bad compliance with therapy [4,11].

Pts, who are on HD more then 1 year, complain on pruritus significantly more frequently than pts starting with HD. That is in accordance with the reports from many similar studies [4,3]. Pruritus usually begins about six months after the start of dialysis and pts who are on HD more than 1 year usually have more complication of primary illness in general. In our cohort, the majority of pts were on HD for more than 1 year.

Singles complained on pruritus significantly more frequently in relation to the married pts. Some studies confirm that solitary lives of single HD pts may cause a desperate behaviour which support low self-care and noncompliance with therapy [8,12]. Marital relationships can be a source of strength and consolation. However, isolation and marital discord might worsen life of HD pts [13].

Pruritic pts expressed significantly higher level of depression in comparison to the non pruritic pts, which is in accordance with the majority of the reported studies [11,4].

In the short questionnaire that we applied, 52,3 % of HD pts reported that pruritus affect their SQ. So, highly significant difference between pruritic and non pruritic pts in HAMD 4 – "Difficulty of falling asleep" and HAMD 5 – "Frequent awakening during the sleep" were not surprising at all. As we could expect, symptoms were significantly more expressed for the pruritic group of pts [4].

As the level of pt's depression was higher, their level of SQ was significantly lower, which is in accordance with the study of Yun *et al*. [14]. However, it is well know that one of the symptoms of depression are sleeping problems. On the other hand, undepressed pts with sleeping problems over time may develop "day-night reversal", which can cause among all, depression.

As the pts' HD duration was longer, pts were significantly more compliant with their therapy, which is in accordance with the study of Takaki *et al*. [8]. This result may be justified by the pt's progressively increased awareness of having chronic illness. This involves better adjustment to the psychological burden of HD, a gradual change in coping strategies from avoidance to acceptance and some years are needed to reach the goal.

The association between appearance of depression and compliance with therapy was highly significant too. Pt's perception about importance of taking responsibility for their own life affects compliance with the disease therapy [10]. Depressed pts often fails in that regard.

Conclusions

Results of our study confirm the hypothesis that pruritus symptoms are positively associated with longer HD duration, the presence of clinically relevant degrees of depression, poor sleep quality (SQ) and bad compliance with therapy.

Conflict of interest statement. None declared.

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