



Depression, LUTS and ED Relation in Elderly Men

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Authors' contributions

This work was carried out in collaboration between all authors. Author CC designed the study and wrote the first draft of the manuscript. Author OGD wrote the final draft the manuscript and managed the literature searches. Authors MY, IK and EB collected the data. Author GED evaluated the Beck's depression index and author OO managed the analyses of the study. All authors read and approved the final manuscript.

Research Article

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ABSTRACT

Objectives: Depression unfortunately, remains an under-recognized and misdiagnosed condition, especially in the aging population. We aimed to research the relation of depression, LUTS and ED in elderly men.

Methods: In this prospective study, 364 elder male patients were evaluated. For depression research in patients, Beck's Depression Index (BDI) was used. Lower urinary tract symptoms of patients were evaluated by International prostatic symptoms score (IPSS) examination form and Erection quality was evaluated with International Index of Erectile Function (IIEF 5-15) examination form. According to evaluation results, patients were assigned as Group 0: Mild LUTS and no ED (IPSS<7 - IIEF>26), Group 1: Patients describing only moderate and severe LUTS, Group 2: Patients describing only ED (IIEF<26), Group 3: Patients describing both LUTS and ED (IPSS>7 - IIEF<26).

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Results: A significant difference was observed between depression states of patients and their LUTS and IIEFs. Depression risk for the Group 3 was monitored to increase by 5.4 fold ($p=0.012$) according to the Group 0.

Conclusions: ED, LUTS and depression are all common conditions that accompany aging and significantly negatively impact quality of life. So this patient group can be treated more successful by a multidisciplinary approach.

Keywords: Aging; depression; erectile dysfunction; lower urinary tract symptoms.

1. INTRODUCTION

Studies report that the elderly population is increasing day by day. While the proportion of adults aged 65 and older is 12.5%, it is estimated to increase to 20-25% by 2050 Olshansky et al. [1]. In a population of ages of 65 and over, chronic diseases and depression are observed more frequently [2]. The men in this age group, lower urinary tract symptoms (LUTS) and erection problems are also often observed among the urological complaints [3].

Although depression is frequently encountered in elder population, mostly it remains unrecognized or misdiagnosed during diagnosis [4,5]. Depressive symptoms in 70-80% of elders are treated with a misdiagnosis. Other chronic diseases including erectile dysfunction, BPH and cardiovascular diseases may accompany these depressive symptoms [6].

The goal of this study was to research the relation of LUTS and erectile dysfunction (ED) with depression in group of elders.

2. MATERIALS AND METHODS

This study contains a joint study of one center from the east of Turkey and two from the west. Patients consulting urology polyclinics with complaints of LUTS or ED were evaluated. Patients with no previous operation, without neurologic problems, endocrinopathy, and smoking, alcohol and drug addictions were incorporated in the study. Also patients with accompanying chronic disorders such as diabetes mellitus, cardiovascular disorders and chronic lung disorder were not included in the study. In conclusion, 364 elder male patients compatible to the study criteria were evaluated.

LUTS of patients were evaluated by International prostate symptom score (IPSS) examination form (Overall 7 questions and each question is 5 points). IPSS<7 were evaluated as mild LUTS, as moderate between 8-19 and as severe between 20-35. Erection quality was evaluated with International Index of Erectile Function (IIEF 5-15) examination form. In erectile function examination, ED was evaluated as IIEF<26. 0-10 of ED was evaluated as severe, 11-16 as moderate, 17-25 as mild. [7]. According to evaluation results, patients were assigned as Group 0: Mild LUTS and no ED (IPSS<7 - IIEF>26), Group 1: Patients describing only moderate and severe LUTS, Group 2: Patients describing only ED (IIEF<26), Group 3: Patients describing both LUTS and ED (IPSS>7 - IIEF<26).

For the depression research in patients, Beck's Depression Index (BDI) was used and patients answered overall 21 questions through Beck depression scale [8]. When each question was evaluated as 3 points, according to BDI classification, 0-9 points were accepted as normal, 10-18 as mild depression, 19-29 as moderate depression, 30-63 as

severe depression. In addition, patients were evaluated in terms of frequency of seeing doctor, duration of depressive complaints, socio-cultural status and situation of orientation for nonmedical treatments.

Informed consent form and ethics committee approval were received from all of patients.

Statistical analysis was performed using SPSS 11.5 package program. While correlation specified by count (qualitative) was evaluated through chi-square test, multivariate logistic regression analysis was made to find the most valuable variable among factors to have an effect on depression development. $p < 0.05$ value was accepted as statistically significant.

3. RESULTS

The average age of patients was found as 62.8 ± 6.68 (46-88), their average IPSSs as 14.02 ± 6.86 and their average IIEFs as 15.7 ± 7.89 . Three of 364 patients constitute the group 0, 64 of them the group 1, 16 of them the group 2, 281 of them the group 3. In the study, of the patients answering questions according to Beck depression scale, their depressive symptoms as none, mild, moderate and severe were found as 247 (%67, 9), 72 (19.8), 32 (%8.8) , 13 (%3.6), respectively. The average IPSS of 117 patients with depression was found as 17.5 ± 8.06 and their average IIEF was 13.8 ± 8.2 .

A significant difference was observed between depression states of patients and their LUTS and IIEFs. As long as depression degree increases in patients with depression, their LUTSs were observed to exacerbate. Similarly, as long as depression exacerbates, ED complaints were observed to increase. A significant difference existed here in the statistical aspect, too (Table 1).

When depression state and socio-cultural levels of patients, complaint durations in terms of LUTS or erectile complaints, frequency of seeing doctor, their IPSSs, their IIEFs, their states of orientation for nonmedical treatments were taken into consideration; the socio-cultural distribution of patients after scoring are at the low level for 74 (30%), at the middle level for 104 (42.1%) of them, at the high level for 69 (27.9%) of those who has no depression, 1 (7.7%) of patients with severe depressive symptoms is at the low socio-cultural level, 8 (61.5%) of them at the middle level, 4 (30.8%) of them at the high level (Table 1).

There was no difference between complaint duration and depressive state. While the majority (86.6%) of patients applying to the polyclinic, without depression, came willingly for examination, this rate dropped to 53.8% as depression severity increases. Furthermore, as depression severity increases, the rates of patients coming by familial and physician orientations were detected to increase. A significant difference was found between application frequency and depression state.

As long as depression severity of patients increases, they were detected to endeavor to try alternative treatments (herbal drugs).

In an age-adjusted multivariate analysis to understand which is the most effective variable that has a significant relation with depression, Group 3 was associated with 5.4 odds of having clinically relevant depressive symptoms when compared to Group 0 ($p=0.012$). Additionally, the socio-cultural level at the middle and high level increased the risk by 4.4 and 3.4 folds according to the low socio-cultural level, respectively ($P=.0001$ and $.001$, respectively) (Table 2).

Table 1. Comparison of depression and socio-cultural situation, complaint duration, application status, IPSS, IIEF, paramedical treatments

| | | Depression | | | | P value |
|--------------------------|-------------|------------|------------|----------------|--------------|---------|
| | | None (n/%) | Mild (n/%) | Moderate (n/%) | Severe (n/%) | |
| Socio-cultural situation | Low | 74/30.0 | 10/13.9 | 5/15.6 | 1/7.7 | 0.004* |
| | Middle | 104/42.1 | 28/38.9 | 11/34.4 | 8/61.5 | |
| | High | 69/27.9 | 34/47.2 | 16/50.0 | 4/30.8 | |
| Complaint duration | <1 month | 39/15.8 | 15/20.8 | 5/15.6 | 4/30.8 | 0.159 |
| | 1 ay-1 year | 80/32.4 | 22/30.6 | 16/50.0 | 6/46.2 | |
| | >1 year | 128/51.8 | 35/48.6 | 11/34.4 | 3/23.1 | |
| Application status | Family | 17/6.9 | 13/18.1 | 7/21.9 | 3/23.1 | 0.001* |
| | Self | 214/86.6 | 52/72.2 | 20/62.5 | 7/53.8 | |
| | Physician | 16/6.5 | 7/9.7 | 5/15.6 | 3/23.1 | |
| IPSS | Mild | 16/6.5 | 3/75.0 | 46/65.7 | 23/53.5 | 0.0001* |
| | Moderate | 211/85.4 | 1/25.0 | 21/30.0 | 10/23.3 | |
| | Severe | 20/8.1 | 0/0 | 3/4.3 | 10/23.3 | |
| IIEF | Normal | 115/46.6 | 19/63.3 | 14/31.8 | 6/14 | 0.0001* |
| | Mild | 39/15.8 | 9/30 | 25/56.8 | 19/44.2 | |
| | Moderate | 62/25.1 | 2/6.7 | 5/11.4 | 11/25.6 | |
| | Severe | 31/12.6 | 0/0 | 0/0 | 7/16.3 | |
| Paramedical treatments | No | 209/84.6 | 56/77.8 | 21/65.6 | 5/38.5 | 0.0001* |
| | Yes | 38/15.4 | 16/22.2 | 11/34.4 | 8/61.5 | |

*: $P < 0.05$ Chi square test

Table 2. Logistic regression for having clinically relevant depressive symptoms

| Risk Factor | Adjusted OR ^a | 95 % CI for OR | | p |
|---|--------------------------|----------------|--------|--------|
| | | Lower | Upper | |
| Group 0: patients with slight LUTS and without ED | 1.00 | | | |
| Group1: patients with only moderate and severe LUTS | 1.90 | 0.129 | 27,988 | 0,639 |
| Group2: patients with only ED | 3,29 | 1,29 | 8,40 | 0,012* |
| Group3: patient with both LUTS and ED | 5,49 | 1,46 | 20,40 | 0,012* |
| Socio-cultural situation (Low) | 1,00 | | | |
| Socio-cultural situation (Middle) | 4,40 | 2,20 | 8,76 | 0.0001 |
| Socio-cultural situation (High) | 3,47 | 1,68 | 7,15 | 0.001 |

Footnote: Adjusted for age

The patients with slight LUTS and without ED, with only moderate and severe LUTS, with only ED, with both LUTS and ED, which are the risk factors considered to be clinically important, was included with their socio-cultural mutuality in the regression model with a lot of variables. As a result of the logistic regression analysis with a lot of variables, the variables which were found to be significant in the model were stated in the table with their odds and %95 reliability intervals.

4. DISCUSSION

Depression is a circumstance which few are known about and thus it remains misdiagnosed in most cases. It develops insidiously, particularly, in the elder population [4,5]. To diagnose the disease is difficult in 70-80% of depression patients in the elder's age [6,9,10]. ED, BPH

and depression are cases which accompany to aging; frequently encountered together and affecting the quality of life in a significantly negative way.

LUTS is not a life-threatening circumstance although it is common encountered in the elderly males. Mostly, it affects the quality of life negatively. When LUTS at the moderate and severe level is compared with diabetes, angina, hypertension and gout, it more likely leads to anxiety and depression [11]. In a study showing the relation between LUTS and sadness, patients with LUTS were demonstrated to feel 2-fold more unhappy than the patients describing no LUTS [12]. In another study, severe LUTS was shown to increase the depression risk by 3.9 fold [13]. These findings demonstrate that LUTS has a significant effect on the mental functions of patients. Also, depression in the older males with LUTS may trigger suicide cases in proportion to young patients [14]. In our study, as long as the severity of LUTS increases, the severity of depression also increases significantly ($P=.0001$). When it was evaluated with multivariate analysis, it was not an independent risk factor although it increased the depression risk by 1.9 fold ($P=.63$).

The relation between moderate and severe LUTS and depression can be explained in a few ways. The most possible reason is that the quality of life in patients with moderate and severe LUTS has a parallel effect with the severity of symptoms. Males with these symptoms cannot fulfill their daily activities and so do not feel good [15]. As a result, depressive symptoms emerge by means of reduction of the quality of life. Studies show that elderly males whose daily activities are significantly impaired are under the risk in terms of major depression [16]. Similarly, Glover et al. demonstrated that these males shame on their partners and environment and develop a social anxiety [17]. Furthermore, incomplete night sleep due to nocturia in males with LUTS leads falling to sleep on the following day; weakness on works requires caution and depression [18]. General practitioners and urology specialists should be careful in terms of depression in elderly population.

ED is an important health problem affecting the psychosocial state of males. Its incidence between 40-70 ages is 52% [19]. As well as age, hypertension, diabetes mellitus, stroke, antihypertensive and sleeping medicines, high cholesterol, vascular diseases and depressive symptoms are the medical circumstances in relation with ED. Also smoking was shown to be a risk factor for ED [20,21]. The relation between ED and depression was not clearly understood. Changes in regular sleep routine, reduction of likeable and pleasurable activities are signs of depression. Because of the ED attacks, depression erectile insufficiency increases even more. So, this causes a vicious circle, aggravating depression even more. In conclusion, with the absence of treatment, the person exhibits flight from sexual events [22].

In a study by Samule Yeung et al., all potential factors associated with ED in Chinese males were assessed and only moderate LUTS (adjusted OR=2.3) and depression (adjusted OR=3.7) were shown to be an independent risk factor for ED [23]. The same relation was also shown in other studies [24,25]. While psychogenic factors are blamed for etiology of ED in the past, organic reasons are blamed nowadays by the improvement of sophisticated diagnosis methods [26]. In all of the organic or psychogenic EDs, psychosocial status of the person is affected. According to Massachusetts Male Aging Study, depression increases the incidence of concurrent ED presence by 1.82 fold Feldman et al. [27]. Therefore, ED should be assessed as a multi-factorial circumstance and be considered as a multi-disciplinary approach in treatment.

Looking at the event in reverse, previous studies showed that the depression risk in males with ED increased 4.3 times [28]. However, nocturnal penile tumescence returns to normal after depression treatment. Depression may not be the only causative factor. Its existence as a significant cofactor is important. Yet, the overwhelming evidence from vascular, neurologic and endocrinologic research shows that an organic risk factor for ED exist in the vast majority of cases [6]. In our study, as long as severity of ED increases, the severity of depression was also increased ($P=.0001$). Group 2 was associated with 3.29 odds of having clinically relevant depressive symptoms when compared to Group 0 ($p=0.012$). Group 3 was associated with 5.4 odds of having clinically relevant depressive symptoms when compared to Group 0 ($p=0.012$).

5. CONCLUSION

The majority of patients consulting to urology polyclinic are BPH patients complaining with LUTS. In addition, patients consulting with ED complaint also are pretty great in number. These diseases should be kept in mind as the trigger depression and the case should have a multidisciplinary approach for treatment. Psychogenic ED will be easily treated with a treatment depression diagnosed carefully. Patients with LUTS may better response to urologic medical treatment by treatment of concurrent depression. With multidisciplinary approach, we think that this patient group can be treated more successfully without orientation for paramedical treatments.

CONSENT

Informed consent form was obtained from all patients.

ETHICAL APPROVAL

Ethics committee approval were received.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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