COMORBID CHRONIC DISEASES IN DEPRESSED AND NON-DEPRESSED PATIENTS IN FAMILY PRACTICE

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SUMMARY

Introduction: Depression is one of the five most frequent disorders in primary care practice and often remains unrecognized. One of the reasons why depression often passes unnoticed is comorbidity – a number of different chronic diseases coexist with depression, especially in elderly patients.

Aim: The aim of this research was to assess the difference between depressed and non-depressed patients regarding somatic and mental comorbidity. The differences in drug use were also examined.

Subjects and Methods: Five hundred successive adult patients visiting family physicians in Rijeka, Croatia, were polled using the Beck Depression Inventory and a general questionnaire which was created for the purpose of the study. The existing medical records were also used.

Results: Elevated depression level was determined in 48.1% of the examinees. These patients were suffering from larger number of chronic diseases (X=1.23) than non-depressed patients (X=0.70; t=5.07; p<0.001; z=4.93; p<0.001), especially cardiac, mental, renal and osteomuscular diseases. Depressed persons used significantly more drugs (X=1.28) than non-depressed patients (X=0.58; t=6.10; p<0.001; z=5.78; p<0.001), especially antirheumatics, analgesics, sedatives, antidepressants, antiallergics and diuretics.

Conclusion: The research results point to a necessity of routine screening and early treatment of depression in patients with chronic diseases in primary care practice.

Key words: *comorbidity - chronic diseases – depression - family physician*

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INTRODUCTION

Comorbidity (or multimorbidity) is quite a significant problem that primary care practice deals with. Comorbidity of mental and physical diseases is especially significant (Van den Akker 1998, Robertson & Katona 1997).

Depression, one of the five most frequent disorders in primary care practice often affects patients suffering from other chronic diseases (Jakovljević 1988). Patients suffering from various chronic diseases run an increased risk of depression (Robertson & Katona 1997). The prevalence of depression is significantly higher in patients who had a heart attack or stroke and in patients suffering from diabetes, Parkinson's disease, Alzheimer and other diseases (Robertson & Katona 1997, Kennedy 2001, Noël et al. 2004, Schrag et al. 2001). Depression often remains unrecognized in more than 50 percent of the cases (Jakovljević 1988, Diminić-Lisica et al. 2005). However, some authors say that family practitioners screen their patients for depression more often than some specialists do (Nicholas & Brown 2000).

Depression often hides behind somatic complaints. Simultaneous presence of physical disease symptoms is also one of the reasons why depression is often unrecognized.

It is especially difficult to determine depression in patients suffering from physical diseases. Depression symptoms have to be differentiated from physical disease symptoms. Possible drug interaction also has to be borne in mind (Consoli 2003). There are several ways of defining the correlation between depression and physical diseases. Depression can develop as a reaction to a physical disease and its treatment. Depression can appear prior to physical diseases. Both can develop after serious crises in life. Depression can be responsible for developing certain physical symptoms which are somatic equivalents of depression (Robertson & Katona 1997).

Comorbid depression complicates physical diseases, aggravates their course and reduces the efficiency of treatment (Robertson & Katona 1997, Benton et al. 2007). Not only that comorbid depression damages the physical condition, but it can reoccur due to a bad physical condition. Furthermore, physical condition itself can aggravate the course of depression (Robertson & Katona 1997). Treatment of depression which coexists with other medical conditions is less efficient (Koike et al. 2002).

Depression in comorbidity with other mental disorders is the current issue in psychiatric discussions (Goodwin et al. 2007, Otte 2008). On the one hand, depression is considered to be one end of the spectrum of anxiety and depressive disorders. On the other hand, comorbidity of mental disorders is often viewed as coexistence of various diseases (Keenan et al. 2009, Rice et atl 2004). Depression symptoms often pass unrecognized due to symptoms of another mental disorder (Young et al. 2008).

It can be assumed that depression is largely unrecognized in primary care patients and that depressive patients mostly suffer from comorbid somatic and mental disorders. The treatment of such disorders is therefore less successful.

The aim of this study was to examine the differences in depressed and non-depressed primary care patients regarding comorbidity and to examine the differences regarding the administered drugs.

SUBJECTS AND METHODS

The research was conducted on a sample of 500 successive adults visiting a family practitioner within a three-month period. The respondents were of different age, sex, occupation and education level. These 500 successive adult patients were examined using the Beck Depression Inventory and a general questionnaire created for the purpose of the study (Beck et al. 1961, Grubac 1989). The existing medical records were also used.

The research excluded patients who were not able to participate due to following reasons: bad general condition, high temperature, arm immobilization, inability to read or write without glasses, blindness and intellectual inability.

The Beck Depression Inventory

The Beck Depression Inventory (BDI) is a self-assessment instrument consisting of 21 items. The scores range from 0 to 63. Based on the Harvard standard, the results fall into the categories of clinic depression and non-clinic depression. The cut-offs are as follows: 0–9 indicates that a person is not depressed, 10–18 indicates mild-moderate depression, 19–29 indicates moderate-severe depression and 30–63 indicates severe depression (Beck et al. 1961, Grubac 1989).

General questionnaire

The general questionnaire contained demographic questions regarding age, sex, occupation, marital status and coexistence of chronic diseases and drug use. Information on chronic diseases and drug use were confirmed by the participants' medical records.

STATISTICAL ANALYSIS

Statistical analysis included parametric and nonparametric statistical methods. In order to calculate the differences between the variables presented in form of frequencies we used the Chi-square test. Continuous variables with normal distribution were tested with a t-test for independent variables. Variables with abnormal distribution were tested using the Mann-Whitney U test.

RESULTS

Of 459 respondents who participated the research 61.65 % were women (N=283) and 38.35% were men (N=176). Their mean age was 51 years (C=51 (18.82)).

The results revealed that 48.1% (N=221) of the respondents suffered from mild, moderate or severe depression based on the BDI results, of which 26.1% was mildly depressed, 15.7% (N=72) was moderately depressed and 6.3% (N=29), was severely depressed. 51.9% (N=238) of the respondents showed low or normal depression level.

Differences between depressed and non-depressed participants regarding the average number of comorbid diseases were examined by using a t-test. The t-test results demonstrated that depressed participants suffered from a significantly higher number of diseases (1.23) compared to non-depressed participants (0.70) (t=5.07; p<0.001). Considering the fact that distribution of the number of diseases was abnormal, the difference was additionally examined by using the non-parametric Mann-Whitney U test. The results of the Mann-Whitney U test showed the same results (z=4.93; p<0.001) – depressed participants suffered from a significantly higher number of diseases (Table 1).

The results also indicated that patients with higher depression level more often suffered from cardiac (p=0.03), mental (p<0.001), renal (p=0.03) and osteomuscular diseases (p =0.001) (Table 2).

Table 1. The average number of diseases in non-depressed and depressed patients

Depression	X	Sd	Median	Range	T-test Mann-Whitney test
Non-depressed	0.70	0.91	0	0-7	t = 5.07; p<0.001
Depressed	1.23	1.29	1	0-8	z = 4.93; p < 0.001

X-aritmetic mean; SD-standard deviation; T - T-test; z - z-value; p- probability

The research of drug use in patients with an elevated and normal depression level indicated that depressed patients used significantly higher number of drugs (X=1.28) compared to non-depressed patients (X=0.58) (t=6.10; p<0.001, z=5.78; p<0.00), especially antirheumatics (p<0.001), sedatives (p<0.001), antiallergics (p=0.05) and diuretics (p=0.05) (Table 3).

Table 2. The number and percentage of non-depressed and depressed patients with cardiac, mental, renal, osteomuscular and other diseases

Diseases	Non-depressed (N=238)	Depressed (N=221)	Statistics χ^2; p
Cardiac diseases	12 5.04%	24 10.85%	χ^2=4.59; p=0.03
Mental diseases	19 7.98%	45 20.36%	χ^2=13.62; p<0.001
Osteomuscular diseases	22 9.24%	45 20.36%	χ^2=10.49; p=0.001
Renal diseases	2 0.84%	10 4.52%	χ^2=4.75; p=0.03
Diabetes	8 3.36%	16 7.2%	χ^2=2.74; p=0.10
Hypertension	44 18.45%	54 24.43%	χ^2=2.07; p=0.15
Allergies	8 3.36%	10 4.52%	χ^2=0.16; p=0.69
Rheumatic arthritis	7 2.94%	14 6.33%	χ^2=2.30; p=0.13
Asthma	7 2.66%	8 3.62%	χ^2=0.02; p=0.88
Skin diseases	6 2.52%	9 4.07%	χ^2=0.45; p=0.50
Malign diseases	4 1.68%	2 0,90%	χ^2=0.10; p=0.75
Thyroid diseases	8 3.36%	8 3.62%	χ^2=0.00; p=1.00
Peptic ulcer	13 5.46%	13 5.88%	χ^2=0.00; p=1.00
Neurological diseases	6 2.52%	14 6.33%	χ^2=3.14; p=0.08

χ^2 – Chi-square; p – probability

Table 3. The number and percentage of non-depressed and depressed patients who take antirheumatics, sedatives, diuretics, antiallergics and other drugs

Drugs	Non-depressed (N=238)	Depressed (N=221)	Statistics χ^2; p
Antirheumatics	10 4.20%	37 16.7%	χ^2=18.27; p<0.001
Sedatives	16 6.72%	52 23.52%	χ^2=24.33; p<0.001
Diuretics	4 25.0%	12 75.0%	χ^2=3.74; p=0.05
Antiallergics	4 1.68%	12 5.43%	χ^2=3.74; p=0.05
Antihypertensives	42 17.64%	47 21.27%	χ^2=0.74; p=0.39
Antidiabetics	4 1.68%	8 3.62%	χ^2=1.02; p=0.31
Analgesics	3 1.26%	9 4.07%	χ^2=2.54; p=0.11
Hypnotics	1 0.42%	5 2.26%	χ^2=1.76; p=0.19
Antipsychotics	7 2.94%	5 2.26%	χ^2=0.03; p=0.87
Spasmolytics	2 0.84%	2 0,90%	χ^2=0.00; p=1.00
Antiulcer drugs	4 1.68%	9 4.07%	χ^2=1.59; p=0.21
Inzulin	2 0.84%	5 2.62%	χ^2=0.74; p=0.39
Antiulcer drugs	4 44.4%	5 55.6%	χ^2=0.01; p=0.91
Other drugs	26 37.7%	43 62.3%	χ^2=5.88; p=0.02

χ^2 – Chi-square; p – probability

DISCUSSION

The analysis of morbidity in patients with an elevated depression level indicated higher prevalence of cardiac, mental, osteomuscular and renal diseases. These patients used significantly higher number of antirheumatics, sedatives, diuretics and antiallergics.

A large majority of studies show that depression is more prevalent in cardiovascular patients than in general population. Furthermore, these studies point to a significant correlation of depression and mortality in cardiovascular patients (Van der Akker et al. 1998, Rudisch & Nemeroff 2003, Davies et al. 2004, Whooley et al. 2008, Follath 2003).

Correlation of osteomuscular diseases and mental disorders with depression has already been described in literature (France et al. 1986, Van et al. 2002, Celiker et al. 1997). Back pain is one of the most frequent symptoms that primary care patients complain to, with the prevalence reaching 40% (Olbrich & Ruch 2001). Studies made by Dutch authors on the correlation of neck pain and upper extremity pain with mental disorders show that mental condition appears to be more important when it comes to visiting family practice and

using health care services (Van et al. 2002). Depression symptoms often occur in the end stage of renal insufficiency. These are sometimes the first symptoms of depression and patients are therefore referred to a psychiatrist. Certain symptoms of uraemia are similar to symptoms of depression – fatigue, appetite loss and apathy. These symptoms are caused by metabolic changes in terms of disturbance in electrolytes, sodium, potassium, chloride, calcium, phosphates and acid-base balance. Psychosocial aspects of depression related to renal diseases include strict regime and diet for the patients, especially ones in chronic dialysis (Son et al. 2009).

The results which show that depressed patients are more inclined to using antirheumatics agree with literature data referring to correlation of pain syndromes and osteomuscular diseases with depression (France et al. 1986, Van et al. 2002, Celiker et al. 1997). Our own experience showed that persons with anxiety or depression disorder more often complained about symptoms which indicate an allergy. However, these patients say their physical condition improves after taking antiallergics, even in cases when an allergy has not been determined by allergy testing. The reason of

improvement might lie in a mildly sedative effect of antiallergics (Donaldson et al. 2007). Sleep disorder and increased anxiety which occur in depression are reasons of an increased sedative intake (Overland et al. 2008).

Limitations of this research are: relatively small sample, random sampling method, group inhomogeneity and self-assessment test.

CONCLUSION

Patients suffering from cardiac diseases, mental disorders, osteomuscular diseases and renal diseases run the risk of depression.

An increased use of drugs, especially antirheumatics, sedatives, antiallergics and diuretics by depressed patients shows a negative impact of depression on comorbid diseases, but it also indicates that depression is often unrecognized and untreated in the physically ill.

These conclusions point to a necessity of routine screening for depression and its treatment in primary care patients suffering from chronic diseases. It can improve the patients' treatment and prevent complications of depression and other chronic medical conditions.

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