ORIGINAL ARTICLE

ANXIETY AND DEPRESSIVE DISORDERS IN PATIENTS WITH ARTERIAL HYPERTENSION

DOI: 10.36740/WLek202103113

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ABSTRACT

The aim: To study the influence of anxiety and depressive disorders on life quality of patients with arterial hypertension.

Materials and methods: 55 patients with arterial hypertension (AH) of 2nd stage were examined to reach the goal. Age diapason was 25-73 years, the middle age was 53.56+10.28. There were 58.2% (32) of women and 41.8% (23) of men among the patients.

Results: Results analysis of the investigation of patients with arterial hypertension and anxiety and depressive disorders using the Spielberger-Khanin anxiety inventory showed moderate (30.9%) and high (69.1%) level of trait anxiety. As for the state anxiety the high level of it was confirmed in 74.6% of studied patients and moderate level of state anxiety in 25.5% of patients. During the analysis of gender-based distribution the trait anxiety level was significantly higher in women ($p<0.05$). Results of PHQ-9 showed subclinical depression level (12.7%), mild (49.1%) and moderate (16.4%). Moderate manifestations of depression were found in 12.7%, severe depression in 9.1% (5 individuals). As for the gender-based distribution, anxiety indicators were significantly higher in women ($p<0.01$). HADS method did not show significant difference of depression levels of gender-based distribution.

Conclusions: The majority of individuals with arterial hypertension and nonpsychotic mental disorders have a high level of trait and state anxiety. Direct correlation was found between the trait anxiety indicator and depression severity, which were defined according to HADS and PHQ-9 questionnaires. The level of anxiety and depressive episode severity were found to be reliably higher in women in gender-based distribution, that/which was accompanied by decrease in most of the life quality indicators.

KEY WORDS: Arterial hypertension, anxiety and depression disorders, life quality of patients

Wiad Lek. 2021;74(3 p.I):455-459

INTRODUCTION

Multicenter investigations concluded that depressive persistence influences cardiovascular diseases (CVD) progression as well as obesity and hypercholesterolemia [1]. The frequency of anxiety (AN) and depressive (DEP) disorders in patients with cardiovascular system pathology is ranged between 13-28%. It is proved that existence of depression and anxiety worsens the prognosis, promotes the progression of main disease, complicates the selection of drug treatment and can be a trigger of life-threatening conditions [2]. It is defined that persistence of coronary artery disease, arrhythmia is more often accompanied by anxiety disorders and development of cognitive deficit [3]. Awareness of cardiovascular diseases risk factors in patients who suffers from anxiety/depression is reduced. When the level of anxiety increases, the part of smokers significantly grows up, less amount of individuals follow the diet recommendations and reduce alcohol intake, even after doctor's consultation [4, 5].

It is worth to remember, that depression correlates with life quality of patients: the relationship between psychosocial risk factors and cognitive disorders, which were combined with depression, anxiety, low psychosocial and socio-economic status in patients with CVD is proved [6, 7].

THE AIM

The goal was to study an influence of anxiety and depressive disorders on life quality in patients with arterial hypertension.

MATERIALS AND METHODS

55 patients with arterial hypertension (AH) of 2nd stage were examined to reach the goal. Age diapason was 25-73 years, the middle age was 53.56+10.28. There were 58.2% (32) of women and 41.8% (23) of men among the patients.

Diagnosis of arterial hypertension, anxiety and depression were verified relying on anamnesis data, physical examination, phsychodiagnostic examination using standard methods.

Questionnaires used for confirming and estimating of depressive severity are the following: HADS, PHQ-9 scale, Spielberger-Khanin anxiety inventory. SF-36 questionnaire was used to estimate quality of life.

The investigation was carried out following the main bioethics requirements for clinical researches. Statistical analysis of data was processed by using Microsoft Excel and Microsoft Access Soft. Distribution normality was checked

up by Kolmogorov-Smirnov test. Wilcoxon-Mann-Whitney test was used for comparison of samples, as distribution of most of them was different from normal. Correlation was estimated by Spearman's rank correlation coefficient.

RESULTS

Analysis of typical complaints showed following changes: heart pain was noticed in 96.4% cases, 56.4% of women and 40.0% of men were among them; headache was marked by 70.9% of patients, 49.0% of women and 21.8% of men among them. Headache was associated with elevation in blood pressure.

As for the character of heart pain, the major part of patients complained of pressing pain – 63.6%, 29.1% of patients noticed stabbing pain, the rest 7.4% marked aching pain. Patients associated appearance of pain as with physical activity – 65. 5%, among them 38.2% were women, as with emotional stress – 63.6%, among them 45. 5% were women.

Pain at rest was present in 18.2% of patients. Shortness of breath was noticed in 65.5% of patients, emotional stress provoked it in 36.4% of cases. Tachycardia harassed 65.5% of patients, dizziness was marked in 50.9% of cases, there were 47.3% of women. 50.9% of respondents noted arrhythmia.

30.9% of patients complained of decreased appetite, 21.8% of women were among of them. Mood decline was noted in 65.5% of patients (45.5% – women). 65.5% of patients complied on difficulty of falling asleep, frequent awakening disturbed 63,6% of patients, of which 40.0% were women, nightmares were noticed by 20.0% of patients. The major part of patients were married – 70.9%, those who lost husband/wife were 12.7%, 9.0% of patients were in civil marriage, 7.4% were single.

During the survey about occupational hazards 41.8% of patients noted excessive emotional strain, 23.6% of patients noted increased responsibility for result. 21.8% of patients talked about poor physical activity, associated with working process. Lack of physical strain and forced interruption of labor regime were marked in 10.90 and 5.5% of cases relatively. Family history of cardiovascular diseases was present in 58.2% of patients.

Gender-based distribution analysis showed that level of trait anxiety was significantly higher in women 51.75+1.17 points, than in men – 46.39+1.78 points ($p<0.05$). (fig.1). State anxiety as a reaction to external circumstances, was slightly different in gender groups of men and women – 46.57+1.90 points and 48.71+1.46 points relatively, but also reached a high level.

PHQ-9 results are the following: subclinical level depression in 12.7% (7 individuals), mild level depression – 49.1% (27 individuals), moderate level depression – 16.4% (9 individuals). Depression manifestations of moderate severity were found in 12.7% (7 individuals), severe depression – in 9.1% (5 individuals).

As for the gender distribution, anxiety and depression measures were significantly higher in women, than in men – 10.47+0.50 points та 8.57+0.77 points ($p<0.01$) respectively.

Study of depression levels using HADS method showed statistically unreliable difference in gender distribution: 8.75+0.81 points in women, 7.04+0.73 points in men. The level of depression was determined by PHQ-9 and was moderately higher in women compared with men – 8.94+0.87 points and 8.17+1.22 points respectively.

Stated indicators were considerably lower in the group with mild depressive episode compared with the group with moderate depressive episode. Correlation coefficient between measures of trait anxiety and depression severity was of 0.71 and 0.79 respectively, determined by results of HADS and PHQ-9 (fig. 2).

Absolute measures of anxiety levels in patients having mild depressive episode (DE) were 6.18+0.63 points compared with 8.5+0.87 points in patients with moderate DE ($p<0.05$). Trait anxiety level was significantly lower in mild DE than in moderate – 45+2.43 and 53.08+2.05 points ($p<0.05$) respectively. Absolute measures of state anxiety (SA) level were also significantly lower in patients having mild DE: 41.45+1.78 points compared with 54.5+2.58 points in moderate DE (fig. 3).

Role-emotional (RE) score was considerably lower in the group with mixed anxiety-depressive disorder (MADD) 26.56+6.34 points compared with 32.17+7.31 points in the group with depressive episode. Bodily pain (P) measures were also lower in mixed anxiety-depressive disorder than in DE – 51.94+4.10 points and 63.65+5.72 points respectively. It was determined that level of role-emotional and mental health decrease significantly with anxiety component present – 36.46+6.59 points and 55.00+2.85 points in MADD compared with 39.12+7.74 points and 59.74+4.39 points in DE. PF as a trait of physical activity, on the other hand, was of higher level in anxiety-depressive disorder compared with DE – 58.78+4.97 points and 53.26+5.35 points respectively, that most likely can be explained by restlessness of patients having ADD and quick switching of attention to extrinsic stimulus while being constantly fixated on their own bodily sensations.

Absolute measures of PF in women compared with men were 54,72+4,90 points – 58.91+5.50 points respectively (fig. 4).

Strong correlation was found between moderate DE and significant decrease in constituents of life quality in the process of analysis of life quality indicators and severity of DE, what most likely is associated with severity of non-psychotic mental disorder and absence of the vision for the future in this cohort. PF was significantly lower in patients having moderate DE compared with patients having mild DE, 37.08+5.41 points and 70.90+6.06 points respectively ($p<0.01$). Substantial difference was found between PF in patients having mild and moderate depressive episode, that shows fair limitations in usual role activities, physical activities due to the presence of depressive component. PF measures in mild DE accounted for 52.27+10.36 points and 13.75+7.13 points in moderate DE, ($p<0.01$).

Significant difference between RE scores in women and men was observed: 19.21+3.87 points and 42.39+7.9 points

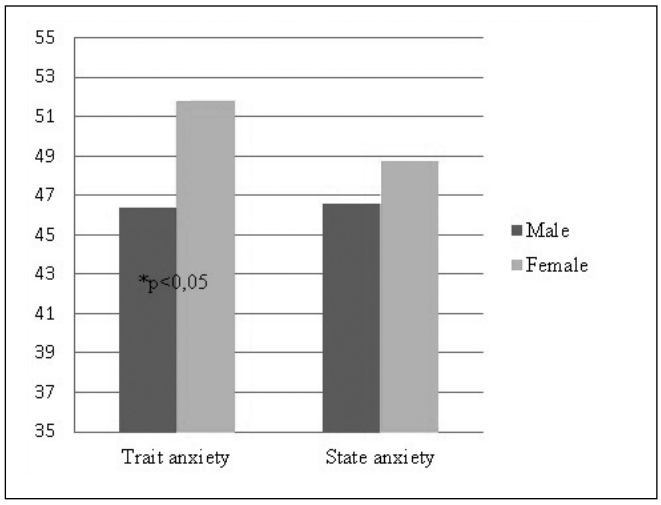

Fig. 1. Trait and state anxiety levels indicators in examined patients according to Spielberger-Khanin anxiety inventory results, gender distribution

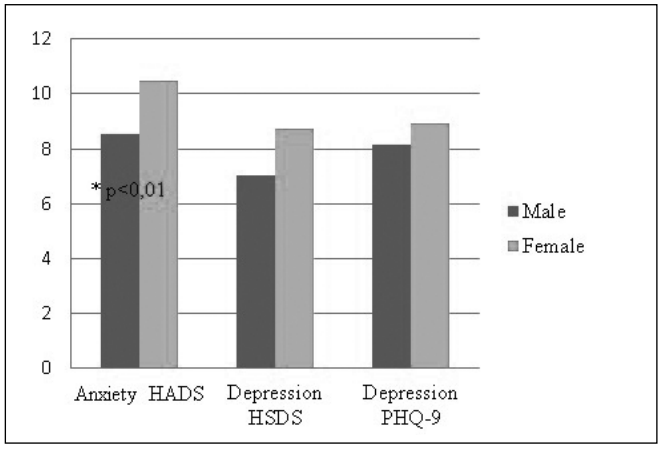

Fig. 2. Anxiety and depression levels measures in examined patients according to HADS and PHQ-9 results, gender distribution

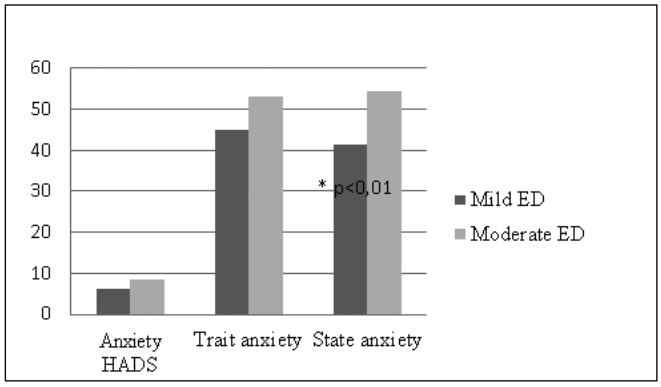

Fig. 3. Measures of anxiety level in examined patients according to HADS and Spielberger-Khanin anxiety inventory results depending on the severity of depression

respectively, what can be explained by the characteristics of women mentioned above. BP measures results were reliable, 47.97+3.87 points in women which is significantly lower than in men – 69.17+5.30 points, that states considerable limitations in physical activities in affected women compared with men. It is worthy of note that the character of pain also has gender specificities, 97.0% of women had complaints about pressing lingering pain that caused constant background anxiety. A substantial difference between general health (GH) and RE scores was not observed: GH – 50.81+2.8 points (women) and 49.26+3.94 points (men); RE – 36.46+6.59 points (women) and 39.11+7.75 points (men). The difference between vitality indicators (VI) in women and men was not significant – 44,37+3,46 points and 50.87+3.93 points respectively (fig. 5). Mental health (MH) measures results were reliably lower in women – 53.25+2.89 points than in men – 62.17+4.22 points, ($p<0.05$).

Significant decrease of GH level measure was found both in patients with moderate and mild depressive episode: 42.25+5.21 points and 59.18+5.99 points respectively, ($p<0.05$). Vitality indicator was significantly higher in patients having mild DE – 58.18+4.22 points, compared with patients having moderate DE – 36.67+5.88 points. RE scores were reliably lower in the group with moderate DE – 44.79+5.85 points and 22,19+6,26 points, compared with the measures of the group with mild DE – 79.55+5.40 points and 57.58+12.78 points, ($p<0.01$), ($p<0.05$). MH indicator in the groups with mild and moderate DE accounted for 69.64+4.73 and 50.67+6.27 points respectively ($p<0.05$), that can be associated with the mental status of patients.

DISCUSSION

The HADS and PHQ-9 are both rapid and reliable. The HADS has the advantage of evaluating both depression and anxiety, and the PHQ-9 of being strictly based upon the diagnostic and statistical manual of mental disorders. The correspondance between the scales at the suitable cut-off is proportional, however the identified prevalence was similar. This indicates that the scales do not identify similar cases complitely. This difference needs to be further explored.

Among patients with arterial hypertension there were distributed next nosologiacal forms: the biggest part was presented by patients with mixed anxiety and depressive disorder – 58.2%, less patients had mild depressive episode and moderate depressive episode – 20.0% and 21.8% relatively. Age depression is a significant public health problem and has an large effect on health when comorbid with a chronic medical condition. Coronary heart disease, hypertension, and diabetes are accompanied by a high incidence of depression and have substantial impact on the treatment and prognosis. Depression is a highly prevalent risk factor for incident of and is associated with morbidity and mortality of cardiovascular disease. In addition to the proactive and effective control of primary diseases, efforts should also be made to improve patients' psychological and social function. A better understanding of pathophysiological mechanisms underpinning depression and cardiovascular disease as well as the complex biological crosstalk of cardiovascular disease complicated with depression is particularly important for future therapeutic strategies.

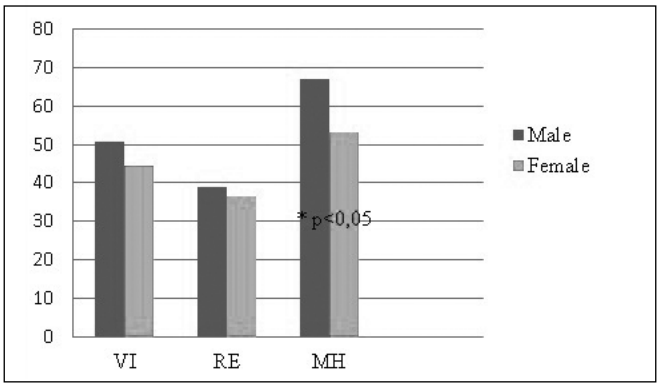

Fig. 4. Life quality measures in examined patients according to SF-36 questionnaire results, gender distribution

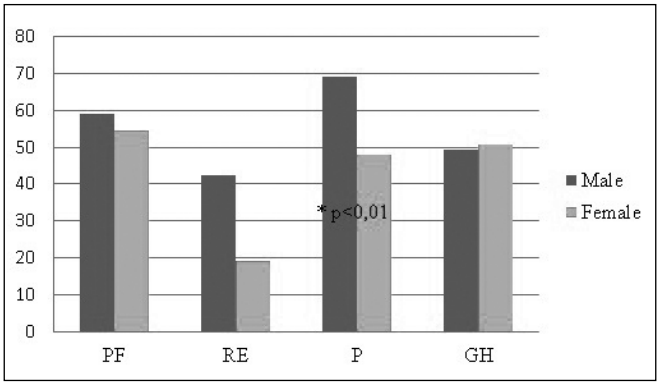

Fig. 5. Life quality measures in examined patients according to SF-36 questionnaire results, gender distribution

Spielberger-Khanin anxiety inventory results analysis in patients with AN, DEP and AH showed next regularities: moderate level of trait anxiety was defined in 30.9% of cases, high level of trait anxiety was defined in 69.1% of cases, mild level of trait anxiety was not defined at all. State anxiety of high level was noted in 74.5% of respondents, of moderate level – was noted in 25.5% of respondents.

In men and women there was diagnosed high level of trait anxiety. There were no differences between the study and control groups in psychological distress symptoms, including anxiety, depression, and hostility, or in anger expression. This can probably evidence about personal predisposition to AN, in patients with AH. In multivariate regression analyses, higher age, male gender, higher sodium intake, lower physical fitness, and alexithymia were independently and highly significantly associated with increased blood pressure, explaining altogether 39.5 % of the cross-sectional variation in mean arterial pressure [1].

Investigation of anxiety level and depressive episode type dependence showed reliable correlations between anxiety indicators measured by HADS and PHQ-9, trait and state anxiety and mild depressive episode.

Life quality level was assessed depending on anxiety-depressive disorders (ADD) in patients with AH. It was determined that anxiety component in mixed anxiety-depressive disorder decreases all measures except physical functioning (PF) and vitality as they are slightly increased. After the analysis of life quality measures in the distribution by gender, it can be argued that women get lower results than men for all indicators, which may be associated with personality traits of women's perceptions of social problems and tendency to overdramatize.

Our observation correlates with statement that dippers had not different levels of health-related quality of life (HRQOL) as compared with non-dippers. LV hypertrophy was associated with lower scores on bodily pain. Female gender, increased age were independently associated with lower physical and mental health scores. The stage of hypertension was not an independent predictor for any of the SF-36 dimensions. Dippers had not different levels of health-related quality of life (HRQOL) as compared with non-dippers. LV hypertrophy was associated with lower scores on bodily pain and kidney failure was associated with lower scores on general health perception [7].

The HADS and PHQ-9 are both rapid and reliable. The HADS has the advantage of evaluating both depression and anxiety, and the PHQ-9 of being strictly based upon the diagnostic and statistical manual of mental disorders. The correspondance between the scales at the suitable cut-off is proportional, however the identified prevalence was similar. This indicates that the scales do not identify similar cases complitely. This difference needs to be further explored.

CONCLUSIONS

1. The majority of individuals with arterial hypertension and nonpsychotic mental disorders have a high level of trait and state anxiety. Direct correlation was found between the trait anxiety indicator and depression severity, which were defined according to HADS and PHQ-9 questionnaires.
2. The level of anxiety and depressive episode severity were found to be reliably higher in women in gender-based distribution, that/which was accompanied by decrease in most of the life quality indicators.
3. Life quality indicators were significantly lower in case of mixed anxiety-depressive disorder, whereas increase of depression severity in depressive disorder caused reliable decrease in the indicators of both physical and mental status.

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Conflict of interest:
The Authors declare no conflict of interest

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Received: 22.03.2020
Accepted: 23.11.2020

A – Work concept and design, **B** – Data collection and analysis, **C** – Responsibility for statistical analysis, **D** – Writing the article, **E** – Critical review, **F** – Final approval of the article