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PSYCHIATRIC AND MEDICAL COMORBIDITIES: OBSERVATIONAL STUDY ON POST-TRAUMATIC STRESS DISORDER, FOCUS ON HIGH BLOOD PRESSURE AND CARDIOVASCULAR DISEASES

Abstract

Brief introduction: People suffering from post-traumatic stress disorder have shown a higher mortality with respect to general population, mainly due to cardiovascular diseases (CVDs) ¹. Metabolic Syndrome and its components (abdominal obesity, high triglyceride levels, low HDL cholesterol levels, high blood pressure, high fasting blood sugar), in particular, are highly prevalent in people with PTSD ². We therefore proposed to observe and describe, in a sample of patients suffering from PTSD, the onset and the course of high pressure and other Metabolic Syndrome components potentially predictive of cardiovascular disease, and other medical diseases.

Materials and Methods: We collected a sample of 37 PTSD patients (average age of $52,7 \pm 11,5$ years) at the “National observatory for the victims of terrorism” at the Psychiatry Section Department in Siena during the years 2014-2015. In the whole sample the type of the event experienced falls into the category of “terrorist’s attack”. Patients were assessed through clinical interview, then specific tests were administered: Clinician-Administered PTSD Scale (CAPS) to confirm the diagnosis, Davidson Trauma Scale (DTS) to assess the disorder severity and Mini-International Neuropsychiatric Interview (MINI) to exclude other psychiatric comorbidities. Current and remote clinical informations on medical conditions were also collected, together with blood and instrumental examinations (e.g. electrocardiogram). On the basis of these data, we retrospectively studied the prevalence of high blood pressure as a predictive of cardiovascular diseases, as well as the prevalence of other medical diseases, subsequently comparing these percentages and observing the onset.

Conclusions: Our results suggest that the components of Metabolic Syndrome are highly prevalent in patients suffering from PTSD, thus confirming recent data from the Literature ². We underline a possible connection between PTSD and the onset of high blood pressure ³. Routine screening and multidisciplinary management of medical and psychiatric conditions is needed. Future research should focus, therefore, on the potential role of unknown factors or mediators that might clarify the nature of this association, stressing on the important comorbidity between psychiatric diseases and medical conditions like gastrointestinal, and neoplastic disorders ⁴.

Key words: PTSD, comorbidities, high blood pressure, Metabolic Syndrome, CVDs

Introduction

Post-traumatic stress disorder (PTSD) can occur in individuals who have been exposed to traumatic experiences to self or to others, resulting in an emotional response involving fear, helplessness, or horror. Various

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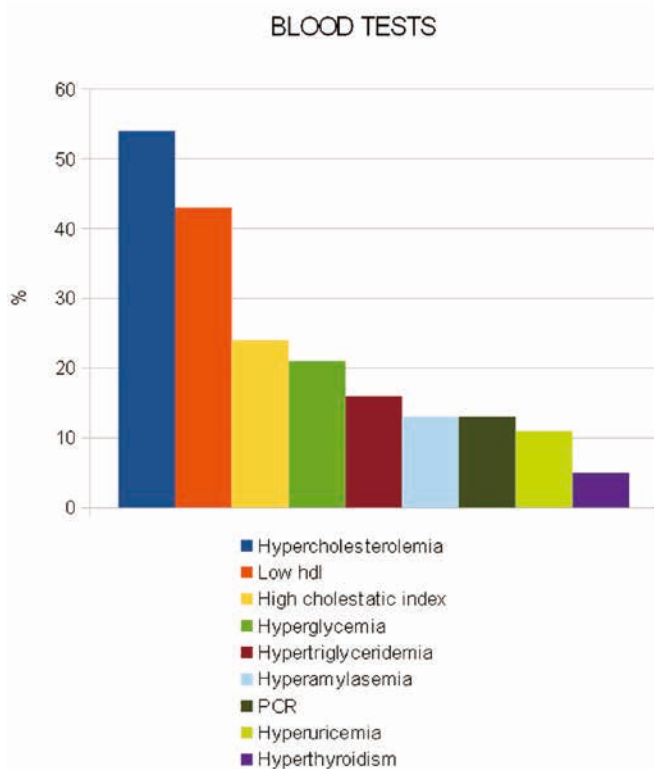


FIGURE 1.

types of trauma can trigger the disorder, including street or war combat, rape and other violent crimes, natural disasters, motor vehicle or industrial accidents. The response to trauma may include symptoms such as re-experiencing, nightmares, sleep disturbance, flashbacks and intense psychological or physiological distress. People suffering from post-traumatic stress disorder have shown a higher mortality with respect to general population, mainly

due to cardiovascular diseases (CVDs) ¹; but also Metabolic Syndrome and its components (abdominal obesity, high triglyceride level, low HDL cholesterol level, high blood pressure, high fasting blood sugar), are highly prevalent in people with PTSD ². We therefore proposed to observe and describe, in a sample of patients suffering from PTSD, the onset and the course of high blood pressure and other Metabolic Syndrome components potentially predictive of cardiovascular diseases, and others medical diseases.

Materials and Methods

We collected a sample of 37 PTSD patients (24 male and 13 female, with a mean age of $52,7 \pm 11,5$ years and median of 57 years, as confirmed by meeting all the criteria of the CAPS (mean severity $84,2 \pm 32,4$) and DTS (mean severity $76,9 \pm 29$), recruited at the “National observatory for the victims of terrorism” at the Psychiatry Section Department in Siena during the years 2014-2015. In the whole sample the type of the event falls into the category of “terrorist’s attack”; the average duration of the disorder was 35 ± 14 years. Patients were assessed through clinical interview, then specific tests were administered: Clinician-Administered PTSD Scale (CAPS) to confirm the diagnosis, Davidson Trauma Scale (DTS) to assess the disorder severity and Mini-International Neuropsychiatric Interview (MINI) to exclude other psychiatric comorbidities. Current and remote clinical informations on medical conditions were also collected, together with blood and instrumental examinations (e.g. electrocardiogram). On the basis of these data, we ret-

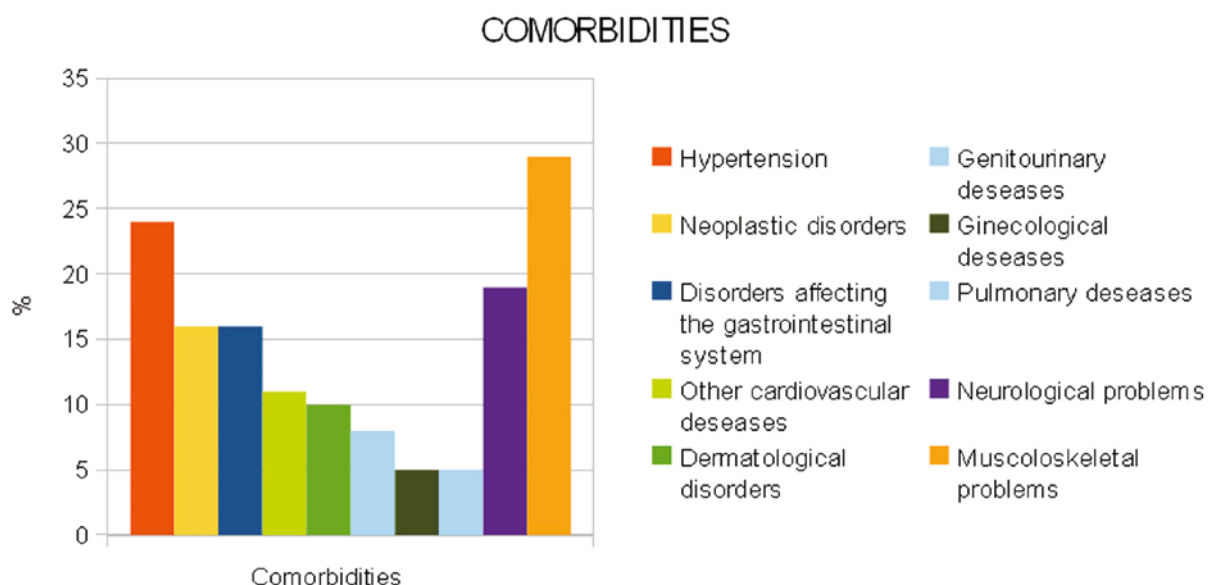


FIGURE 2.

respectively studied the prevalence of high blood pressure as a predictive of cardiovascular diseases, as well as the prevalence of other medical diseases, subsequently comparing these percentages and observing the onset.

Results

In our population we found high prevalence of medical comorbidities. In blood tests (Figure 1) we found presence of hypercholesterolemia in 54% of patients, low HDL cholesterol level in 43% of patients, high cholestatic index in 24% of patients; hyperglycemia in 21% of patients suggesting the presence of diabetes, hypertriglyceridemia in 16% of patients, hyperamylasaemia and high inflammatory indexes (PCR, fibrinogen) in 13% of patients. Moreover, 11% of the sample showed hyperuricemia, 5% had laboratory findings of hyperthyroidism. As regards clinical assessment (Figure 2), 24% of the sample presented hypertension (11% others cardiovascular diseases: Takotsubo cardiomyopathy, angina pectoris, ECG signs of ischemia, venous stasis), 16% presented disorders affecting the gastrointestinal system (mostly GERD and *H. pilory gastritis*), 16% neoplastic diseases, 10% presented dermatological disorders, 8% presented genitourinary diseases, 5% presented

pulmonary diseases (such as asthma) and 5% gynecological diseases. Furthermore, we found an high prevalence of neurological (19%) or musculoskeletal problems (29%) mostly direct consequences of the physical trauma. If we analyze the patients with high blood pressure (24% of prevalence in our population: 8 male and 1 female), we observe that the totality of the patients develops high blood pressure after the traumatic event, and hypertension as cardiovascular disease. The 55,5% within two years after the traumatic event, the other part more than ten years later.

Conclusions

Our results suggest that the components of Metabolic Syndrome are highly prevalent in patients suffering from PTSD, thus confirming recent data from the Literature ². We underline a possible connection between PTSD and the onset of high blood pressure ³. Routine screening and multidisciplinary management of medical and psychiatric conditions is needed. Future research should focus, therefore, on the potential role of unknown factors or mediators that might clarify the nature of this association, stressing on the important comorbidity between psychiatric diseases and medical conditions, like gastrointestinal and neoplastic disorders ⁴.

Take home messages for psychiatric care

- The components of Metabolic Syndrome are highly prevalent in patients suffering from PTSD
- We underline a possible connection between PTSD and the onset of high blood pressure as a predictor of CVDs
- Unknown factors or mediators might clarify the nature of this association, stressing on the important comorbidity between psychiatric diseases and medical conditions, like gastrointestinal and neoplastic disorders

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