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Posttraumatic stress disorder and cardiovascular disease

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Abstract:

In this report i'll review studies indicating that persons with post-traumatic stress disorder (PTSD) may have an increased risk of coronary heart disease and possibly thromboembolic stroke. Patient with PTSD have been reported to have an increased risk of hypertension, and cardiovascular disease. Increased activity of the sympathoadrenal axis may contribute to cardiovascular disease through the effects of catecholamines on the heart, vasculature, and platelet function. Reported links between PTSD and hypertension and other cardiovascular risk factors.

Introduction

Post Traumatic Stress Disorder (PTSD) is an anxiety and even insomnia in both veteran and nonveteran populations, is associated with major forms of cardiovascular disease including those attributed to atherosclerosis such as coronary heart disease and thromboembolic stroke.

Individuals may develop PTSD after being exposed to a traumatic event such as combat experiences, a motor vehicle crash, or sexual assault. Symptoms of PTSD may include nightmares, intrusive thoughts, or other re-experiencing phenomena, the avoidance of situations that remind the person of the traumatic event, a feeling of numbness or being socially detached from family and friends, and hyper-arousal.¹

Discussion:

First study have shown that patients with PTSD have higher heart rates at rest and reduced heart rate variability which is consistent with increased sympathetic activity. The finding that baseline heart rate is higher among veterans suffering from PTSD than among those without PTSD is consistent with chronic hyperstimulation of the autonomic nervous system.

The individuals who participated in the studies may have experienced anxiety because they were anticipating exposure to stimuli that would remind them of traumatic events. study included 32 Vietnam veterans with combat-related PTSD and 26 Vietnam era veterans with no combat exposures, those with PTSD had significantly higher heart rate, systolic and diastolic blood pressure. The biological mechanisms that account for the observed associations between PTSD and cardiovascular disease may relate to the effects of traumatic exposures and chronic stress on the HPA axis and the autonomic nervous system. Dysregulation of the HPA axis and chronic over-stimulation of the autonomic nervous system may contribute to the increases in blood pressure and lipid levels that have been observed in PTSD patients. Catecholamine-induced alterations of platelet activity may also contribute to the apparent link between PTSD and cardiovascular disease.¹

Second study show a total of 34 studies were included with a total sample size across studies of 2,670 subjects. Their results suggested that, on average, persons with PTSD have an elevated basal heart rate as compared with persons without PTSD or those who were not exposed to trauma. The average difference in resting heart rate between persons with or without PTSD was 5 beats per minute.²

Third study shows that the Consequences of PTSD can lead to increased immune cell dysfunction/inflammation, heightened sympathetic nerve activity (hyperarousal), and activation of the renin-angiotensin system (gray circle). We propose that renin-angiotensin system activation promotes autonomic/immune disturbances in the setting of PTSD, and these changes ultimately contribute to the culmination of increased cardiovascular disease risk. PTSD symptoms can also be induced (upward-pointing arrow) by a single cardiovascular related event such as a stroke or heart attack, thus putting these individuals at greater risk for future adverse cardiovascular events.³

Conclusion

Post Traumatic Stress Disorder (PTSD) is an anxiety disorder caused by very stressful, frightening or distressing events. This disorder in some cases leads to cardiovascular disease. patients with PTSD should be carefully treated to avoid complications such as developing a heart disease.

References:

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