

Psychocardiology: The Mysterious Brain-Heart Interaction Discipline!

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Introduction

It is often said that “The heart is the seat of emotions”, in reference to the mystifying interaction between the mind and the heart. Many psychiatric illnesses have been clearly demonstrated to directly or indirectly affect the cardiovascular system. Cardiovascular disease in general can also cause or exacerbate many psychiatric conditions. An increasing amount of literature has been published in Pubmed under the search term “cardiovascular psychiatry” over the past few decades, reflecting the better understanding and recognition of this complex Brain-Heart interaction. (1)

Psychiatric conditions shown to be associated with heart disease include anger, hostility, anxiety, depression, delirium and neurocognitive disorders, psychotic disorders, and post-traumatic stress disorder; all of which impact and are impacted by cardiac critical care. Depression is quite common in patients with coronary heart disease and congestive heart failure, and is associated with increased morbidity and mortality. (2)

The Clinical Commission of the German Heart Society (DGK) recently updated their “state of the art” paper on the current empirical evidence in psychocardiology in 2015. The paper provides evidence-based recommendations for the integration of psychosocial factors into cardiology practice and highlights areas of high priority. (3)

Depression and Anxiety

In a scientific statement, the American Heart Association (AHA) elevated depression to the status of a risk factor for patients with acute coronary syndromes: “depression after acute coronary syndrome is a risk factor for all-cause and cardiac mortality, as well as for composite outcomes including mortality or nonfatal cardiac events. As such, depression should be elevated to the level of a risk factor for poor prognosis after acute coronary syndrome.” (4)

Depression and anxiety in heart patients are associated with cardiac risk behaviors such as smoking, obesity, excess alcohol consumption and medication non-compliance, which elevate the risk associated with mortality to the level of other well-known risk factors such as smoking, according to the Danish national DenHeart survey. (6)

The effect of mood disorders on vascular function, the plausible biological pathways and the potential role played by inflammation and the effect of treatment have been reviewed by Fiedorowicz. (7)

Treatment of depression has been shown to have a positive effect on outcomes in coronary artery disease patients. The ENRICH study showed that use of selective serotonin reuptake inhibitors in depressed patients who experience an acute myocardial infarction might reduce subsequent cardiovascular morbidity and mortality (8). Whether such benefit is related to a direct pharmacologic action of the medications on the inhibition of platelet activation and the lowering of heart rate, or a secondary effect due to enhanced compliance with medications and lifestyle changes after treating depression, is debatable (9). A cognitive-behavioral therapy intervention program was shown to decrease the

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risk of recurrent cardiovascular disease and recurrent acute myocardial infarctions (10).

Conclusion

There is increasing evidence demonstrating an unequivocal interaction between the heart and the brain at the chemical level and at the behavioral level. Cardiovascular disease remains the number one killer globally according to the World Health Organization (WHO). Primary and secondary prevention of cardiac disease incorporate to a large extent behavioral changes which are often challenging to implement without adequate medical provider training, and remain an impediment to cardiovascular disease prevention. Psychocardiology is a rapidly emerging discipline with the potential of helping train medical providers in the proper evaluation and treatment of behavioral challenges in cardiac patients; this is infrequently included in medical training curricula. With its mounting importance, whether psychocardiology will one day become a new medical specialty, or a subspecialty of either cardiology or psychiatry training, is an intriguing thought and remains to be seen.

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