

# Depression and Heart Disease: Preventing a Cycle of Illness

Both Depression and Heart Disease are recognized as serious illnesses on their own which have a formidable impact on health and wellness, but it is important to understand that there is a strong corollary link between the two. As expected the rates for depression increase in those who have been diagnosed with heart disease, the prevalence rates for depressive illness in patients with cardiac disease is about 25%.<sup>1</sup> Additionally those with untreated depression have a greater chance of suffering from heart disease, and experience higher levels of mortality and morbidity compared with patients with a similar illness, but no depression.<sup>2</sup> Due to this causal relationship between the diseases it is important to understand their relationship to one another and how early treatment and prevention of depression can improve the outcomes for those with cardiac disease.

We may understand the relationship between depression and heart disease in a number of ways, and may think of it as a cycle of illness where the two components increase the intensity and severity of illness overall in a patient. The most common co-morbid occurrence is when the physical condition causes depressive illness due to a biological mechanism, or psychological response. In this occurrence the heart disease is the lead illness and depression follows. Many medications used in the treatment of heart disease including beta blockers, digoxin, calcium channel blockers, and steroids have been reported as causing depressive illness in patients due to a direct biological mechanism.<sup>3</sup> Of course the onset, or recent diagnosis, of serious heart disease can be an emotional and traumatic event which can lead to depression. Some studies show that “up to 15% of patients with cardiovascular disease and up to 20% of patients who have gone coronary artery bypass graft surgery experience major depression.”<sup>4</sup>

It is possible for depression to be the lead illness and with heart disease developing, or increasing in severity due to depressive illness. Those suffering from depression are more likely to smoke, use illegal drugs, drink, have poor eating habits, and get inadequate exercise. All of these activities can increase the prevalence of heart disease in patients. In fact it is estimated that “depression pre-dates the medical illness in up to 25% of all patients with co-morbid depression, and it is associated with an increase in somatic complaints.”<sup>1</sup> In fact, biologically “patients with depression have been shown to have increased platelet reactivity, decreased heart variability, and increased pro-inflammatory markers (such as C-reactive protein or CRP), which are all risk factors for cardiovascular disease.”<sup>5</sup>

The connection between heart disease and depression should be an imperative when treating patients affected by either disorder with an emphasis on prevention. Depression should be screened for in general medical patients in order to determine co-morbidities. Two screening tools which have been specifically developed for use are the Hospital Anxiety and Depression Scale, and the Beck Depression Inventory. Detection and treatment of heart disease in those suffering from cardiac illness can improve the patient outcome by reducing the risk for recurrent events. For those who have been identified as suffering from depression there are many treatment options available including psychotherapy, antidepressants, or a combination of the two. New advancements in drug development have produced

effective medications for the treatment of depression which are safe for cardiac patients. These medications include SSRIs (selective serotonin reuptake inhibitors), SNRI (serotonin-norepinephrine reuptake inhibitors), TCA (tricyclic antidepressants), MAOI (monoamine oxidase inhibitors) and antidepressants that work by other mechanisms. Those suffering from depression who have not yet been diagnosed with heart disease can not only benefit from a variety of antidepressants, but can also greatly benefit from general health education focused on regular exercise, proper sleep, nutritional advice, and stress management techniques which can decrease both depression and the risk for heart disease. To optimize patient outcomes and prevent the intensity of illness practitioners should use an integrated approach to tackle all potential problems associated with these diseases in their patient populations.

Part three of a multipart series on the link between physical and behavioral health

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<sup>1</sup> MacHale, Siobhan. *Managing depression in physical illness*. Advances in Psychiatric Treatment, 2002.

<sup>2</sup> L. Wulsin, Vaillant, G. & Wells, V. "A systematic review of the mortality of depression." *Psychosomatic Medicine*, 1999: 6-17.

<sup>3</sup> Bazire, S. *Psychotropic Drug Directory; The Professionals Pocket Handbook*. Lancaster: Quay Publishing Ltd. .

<sup>4</sup> W., Jiang. "Antidepressant therapy in patients with ischemic heart disease." *American Heart Journal*, 2005: 871-881.

<sup>5</sup> Pozuelo, Leo. *Heart and Vascular Health and Prevention*. Cleveland, Ohio: Cleveland Clinic Department of Psychiatry and Psychology, 2008.