

# Hypertension and depression — the terrible two

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Depression is one of the most common mental health disorders globally, presenting an increasing burden everywhere — as are hypertension-related diseases. Depression nearly doubles the risk for developing coronary heart disease, and in those already suffering from heart disease, depression nearly doubles the risk of mortality [1, 2]. This elevated cardiac risk associated with depression is independent of classical risk factors, and similar in degree to smoking and hypercholesterolaemia.

The mechanisms whereby depressive illness can trigger atherosclerosis are supposed to be deregulation in the sympathetic nervous system and hypothalamic-pituitary-adrenal axis [3, 4]. This in turn has a number of harmful downstream effects, including increased heart rate and reduced heart rate variability, endothelial dysfunction, vasoconstriction, production of inflammatory cytokines, platelet activation, insulin resistance, and elevated risk for development of hypertension and metabolic syndrome.

There are many standardized questionnaires to assess depressive symptoms, but the diagnosis requires a clinical interview and fulfilment of at least four depressive symptoms. Alternatively to questionnaires, a preliminary assessment of depression can be made with two core questions:

- Do you feel down, depressed and hopeless?
- Have you lost interest and pleasure in life?

Giving a “yes” answer to either one of these core questions may be as effective as using longer screening instruments [5].

Major depression is more prevalent in people who have suffered a major cardiac event; the large European EUROASPIRE Study showed rates with up to 35% in men and 65% in women [6].

If we look at figures from the community, we see rates of depression of 10% in general practice clinics [7]. There are two European studies conducted among hypertensive patients in which the diagnosis of depression has been made by clinical interview — “the state of the art method”. In the Norwegian community-based study, the prevalence of depression was 6%, while in the hospital-based study in the Netherlands, the prevalence was 11% [8].

Depression may act as a barrier to the adoption of healthy lifestyle and to its maintenance. There are a number of behavioural and lifestyle factors which are present in depressive patients that can increase the chance of developing hypertension and cardiovascular disease. These include increased rates of smoking, alcohol intake, physical inactivity, and obesity [9]. Major depression also predicts poor adherence to medications [10].

It is important to recognize depression in hypertensive subjects and when recognized, to treat it. It is not known which of the various antidepressants available is the best to lower the risk for cardiovascular events. However, selective serotonin reuptake inhibitors can be regarded as the first choice because of their good tolerability and safety profile also in the cardiac setting. On the contrary, tricyclic antidepressants and monoamine oxidase inhibitors may have

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toxic cardiac side effects, and these drugs should be avoided in those who have comorbid cardiac conditions.

Luckily, a Cochrane review has indicated that moderate aerobic exercise in the order of 30 minutes five times a week is beneficial in relieving depressive symptoms with similar efficacy to cognitive behavioural therapy [11] — with an apparent help to control blood pressure, too.

When prescribing beta-blockers, physicians may have concerns about development of depression. However, this conventional wisdom is not supported by randomized trial data. Depression, fatigue and sexual dysfunction are common complaints also among placebo treated subjects.

Depression is often invisible, silent, and denied. But it is common in hypertensive subjects. The toxic combination of hypertension and depression leads to poor health outcomes for both conditions. Depression should be considered as a modifiable risk factor for hypertension and cardiovascular disease — just like we do for smoking, and hypercholesterolaemia. Depression should be screened at least among uncontrolled hypertensive subjects, and busy clinicians could utilize the core questions as a quick and simple screening method for the terrible two — hypertension and depression.

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