

The physical consequences of depressive illness

Include coronary artery disease and reduced bone mineral density

The long term social impact of depressive illness has been extensively investigated,¹ but far less attention has been paid to its physical consequences. There is, however, an important and accumulating body of evidence to indicate that the physical consequences of depression are far from benign. In particular, the increased risk of coronary artery disease and the impact on bone mineral content have both received recent attention.

A 55 year prospective study that examined the relation between mood disorder and physical health in a male population showed the damaging effects of depression.² Among 237 healthy men recruited at college entry and assessed at the age of 70, 45% of those who had suffered a depressive episode were dead at follow up compared with only 5% of those in good psychological health. The differences in longevity could not be explained in terms of cigarette smoking, diet, or alcohol intake. In a similar 35 year study of 1198 male university entrants Ford et al found that major depression increased the risk of coronary artery disease, with a mean lag phase of 10 years between the report of depression and the first report of cardiovascular disease.³ The Kuopio ischaemic heart disease study investigated 2428 men over six years.⁴ Again, among those with no prior history of cardiac disease, those who suffered a depressive episode were at significantly greater risk of myocardial infarction, even when all other risk factors, including smoking, were controlled for.

The epidemiological catchment area study, performed in a cohort of 1551 healthy subjects in Baltimore, is important because it used modern diagnostic criteria for depression.⁵ After an episode of major depression the risk of myocardial infarction increased fourfold to fivefold when other medical risk factors were controlled for. Individuals who had subsyndromal forms of depression, but who never fulfilled criteria for major depression, had a twofold increased risk of myocardial infarction.

Is this increased risk of myocardial infarction after depression gender specific? Barefoot and Schroll studied 409 men and 321 women, all living in Glostrup, Denmark and born in 1914.⁶ Baseline physical and psychiatric assessments were conducted in 1964 and 1974. The study ended in 1991, at which point there had been 290 deaths. Depression was associated with an increased risk of myocardial infarction, and no sex differences in effect size were observed. A relation did exist between severity of depression and risk.

Similarly clearcut findings have been found in relation to bone mineral density. A preliminary study in depressed patients by Schweiger et al showed decreases in lumbar spine density measured by computed tomography.⁷ A recent rigorously controlled study of a younger patient group provided similar results.⁸ Twenty four women with a current or past history of major depression were matched individually for age, body mass index, and menopausal status; women were excluded if they had known risk factors for decreased bone density. Bone mineral density was then

measured using a dual energy x ray absorptiometer. Women with a current or past history of depression had decreased bone mineral density at each trabecular bone site studied, both in absolute values and in deviations from expected peak bone density. In the hip, for example, a decreased density of 10-14% was found. Serum osteocalcin levels (an indicator of bone formation) were lower in depressed women and urinary free cortisol excretion was higher. These changes in bone density are clinically relevant. Decreases in bone density of 10% increase hip fracture rates by more than 40% over a 10 year period.⁹ Once bone density is decreased it is difficult to re-establish, and, given the recurrent nature of depression, these effects on bone will probably be cumulative.

The most consistently shown biological abnormality in major depression is increased activation of the hypothalamic-pituitary-adrenal axis. Hypercortisolism is known to decrease bone mineral density⁹ and to redistribute body fat, increasing the risk of coronary artery disease.¹⁰ Thakore et al matched women with depression who were not taking drugs with age matched healthy controls of similar height and body mass index and performed computed tomography, measuring the total number of pixels of fat density.¹¹ Intra-abdominal fat content was twice as high in the depressed women as in the healthy controls. Increased intra-abdominal fat is a known risk factor for coronary artery disease.

Depression is an illness with major social, psychological, and biological consequences. Clinicians are well aware of the potential cardiac impact of tricyclic antidepressants, but for too long we have ignored the important physical sequelae of depression itself.

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