Review: depression may increase mortality in coronary heart disease


Q Does depression affect mortality in coronary heart disease?

METHODS

Design: Systematic review with meta-analysis.

Data sources: MEDLINE, PsycINFO, PSYINDEX (search date 2003). References from several non-systematic narrative reviews were cross-checked.

Study selection and analysis: Prospective cohort studies in people with coronary heart disease which assessed depression by standardised measures or clinical interview and reported results for depressed versus non-depressed people after at least three months’ follow up. Studies were excluded if they investigated depressive symptoms before a cardiac procedure because of the possibility of preoperative anxiety and depression. Studies were only included if they reported the influence of depressive symptoms or depressive disorders on survival using odds ratio (OR) or hazard ratio (HR). Meta-analysis results were presented for OR and HR of included studies. Heterogeneity was assessed using the $\chi^2$ test and publication bias was assessed using funnel plots.

Outcomes: Death from cardiac cause, death from any cause.

MAIN RESULTS

Twenty studies met inclusion criteria (11,018 people). Depressive symptoms in people with coronary heart disease increased mortality for all follow up periods, even after adjustment for other risk factors. Clinical depression also increased mortality, although this was only significant after six months. After adjustment for other risk factors, clinical depression increased mortality for all follow up periods (see http://www.ebmentalhealth.com supplemental for table).

CONCLUSIONS

Depression increases mortality in coronary heart disease. This result should be interpreted with caution because of heterogeneity among the studies included in the meta-analyses.

NOTES

Some of the meta-analyses showed significant heterogeneity among studies, which reduces the reliability of these results. The funnel plots indicate that there may be publication bias in studies investigating depressive symptoms, which may exaggerate the risk of mortality.

PROGNOSIS

Depressive symptoms are a major concern, as they are frequently associated with morbidity, disability, and mortality. The prevalence rate of depressive symptoms in community dwelling individuals is high and may be as high as 50% in populations over 65 years of age. Behavioural factors, health, and functional status, and psychosocial variables such as loneliness, isolation, and lack of social and family support are considered strong determinants of depressive symptoms.

A recent systematic review has shown that depressive symptoms are associated with the development of coronary heart disease (CHD) in initially healthy people. The meta-analysis by Barth et al suggests that depressive symptoms are an independent risk factor for mortality in patients with CHD.

Psycho-physiological research has indicated several mechanisms that could explain the association between depressive symptoms and CHD such as: cardiotoxicity of some antidepressant drugs; higher prevalence of cardiac risk factors, including cigarette smoking, hypertension, diabetes, and reduced functional capacity; increased coronary disease severity; non-adherence to cardiac prevention and treatment regimens; lower heart rate variability reflecting altered cardiac autonomic tone; increased platelet aggregation; and inflammatory processes.

The meta-analysis by Barth et al, regardless of the methodological weaknesses acknowledged by the authors, shows that there is no prognostic difference between studies that define depression through self-report and those using a clinical diagnosis. This is extremely relevant for clinical practice, because it represents a rationale for assessing depressive symptoms routinely in all people with CHD. The diagnostic scales are simple, easy, and quick to administer. The optimal therapeutic approach for people with CHD could include effective treatments for depression.

There is epidemiological evidence, and a biological plausibility, for an independent association between depressive symptoms and mortality in people with CHD patients. Valid and reliable instruments for the diagnosis and effective treatments for depressive symptoms are available. It is now time for action.

Stefania Maggi, MD, PhD
CNR-Neuroscience Institute, Aging Branch, Padova, Italy