Reviewer’s report

Title: The relationship between depressive symptoms, health service consumption, and prognosis after acute myocardial infarction: a prospective cohort study.

Version: 1 Date: 15 April 2008

Reviewer: Brett Thombs

Reviewer’s report:

The relationship between depressive symptoms, health service consumption, and prognosis after acute myocardial infarction: a prospective cohort study

The objective of the study was to explore the relationship between depressive symptoms and two sets of outcome variables, health service utilization variables and prognostic outcome variables post-AMI. The authors used data from 1,941 patients from 53 hospitals from the SESAMI cohort, which included telephone interviews and assessments of depressive symptoms conducted 30 days post-discharge. They found that depressive symptoms were significantly associated with increased in total, cardiac, and non-cardiac hospitalization, but not with prognosis. The use of the measures chosen by the authors limits comparability with other studies on post-AMI depression and raises questions about the validity of the findings that should be addressed by the authors. On the other hand, the patients in this cohort are well-described in terms of cardiac and other important characteristics, which is a strength of the study. Additionally, the finding that depressive symptoms affect health care utilization more among low-risk patients is of interest.

Major Compulsory Revisions:

1) A thorough description of inclusion and exclusion criteria is needed in this manuscript. A reference to another manuscript is not sufficient.

2) The original BCDRS has been used only in a handful of studies, and only 2 studies by Koenig have validated the instrument in a total of just over 200 patients), all age 70 and over (and a very small number of patients with major depression). Based on Alter et al. (JAMA, 2004), the majority of consented patients in the SESAMI cohort used in this study were < 70 years. Furthermore, the authors don’t use the original BCDRS, but, rather, use a 9-item version adapted from the original BCDRS as their main measure of depressive symptoms. There is no validity data for this, and a rationale is needed. The authors should at a minimum discuss the use of this measure as a significant limitation.

3) The incorporation of 2 other alternative measures of depression symptoms is confusing and of questionable utility. There is no evidence that the psychological well-being scale used in the GUSTO study is a valid measure of depressive symptoms, and it should not be described as such. The 12-item set of
questions is simply the 9 items plus 3 other items of unknown origin, which correlates very highly with the 9-item version. The authors should choose a single depression measure and cutoff and justify them. Of the three measures, the 9-item questionnaire appears to be have the fewest limitations (although its use is a major limitation, see comment #2). Another issue with the multiple measures is that it was not at all clear that the 9-item measure was going to be used as the primary measure in analyses since a description of all 3 measures was provided in the Methods with no indication of the primary measure.

4) The authors refer to an unpublished manuscript on missing data imputation to justify their modified 12-item questionnaire (reference #14). However, that manuscript discusses techniques for replacing data missing for some patients, not the validity of replacing items on a questionnaire for ALL patients. This reference should be removed as it is unrelated and irrelevant to the issue.

5) On page 14, the authors state that they imputed missing depression measures. It is not justifiable to impute the depressive symptoms predictor variable under study for the large number of patients who didn’t even complete the interview and for which no depression data were available. This analysis should be removed.

6) The relative risks in Table 3 for both “low risk” and “high risk” patients based on the GRACE score are higher than the overall relative risks that are reported. The authors should explicitly address this.

7) The authors’ summary of the post-AMI depression and outcomes literature at the bottom of page 16 needs to include more than the 3 studies referenced. There have been several systematic reviews or meta-analyses on this topic published recently, and these should be discussed (e.g., Van Melle et al., Sorensen et al., Barth et al.)

Minor Essential Revisions:
1) On page 5, the phrase “…depression itself may lead to more aggressive health-seeking behaviours…” should be corrected to indicate that patients seek healthcare or health services. The authors go on to state that this results in utilization patterns disproportionate to cardiovascular illness severity and reference Katon (1996). Katon, however, doesn’t specifically mention cardiovascular disease in reference to utilization patterns, and this phrase should be edited to indicate that his more general point based on primary care studies is assumed to apply in cardiovascular disease.

2) Page 8: The authors refer to the “prevalence of post-AMI depression using each of these rating scales,” which should be corrected to indicate a proportion of patients above study cutoffs, which is not the same as a prevalence of depression.

3) The baseline characteristics provided in Table 1 match those in Appendix 2 for the 9-item BCDRS with the exception of the entries in Table 1 for GRACE index score and % PTCA, which appear to be incorrect and should be reviewed.

Discretionary Revisions:
1) The statement of the study objective on page 5 would be improved if the
authors clarified that they are examining one predictor and two sets of outcome variables (health service consumption and prognosis) rather than “the relationship between” the three classes of variables.

2) It would be helpful if the authors would clarify at the bottom of page 5 that references 9 and 10 refer to variations in health services use due to factors related to race/ethnicity and socioeconomic status. Typically the term “psychosocial variables” suggests factors, such as depression, anxiety, or social support.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests