Reviewer's report

Title: Tobacco smoking as a prospective risk factor for depression and poorer quality of life in heart disease

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Reviewer: Alan L Hinderliter

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In their article entitled “Tobacco smoking as a prospective risk factor for depression and poorer quality of life in heart disease”, Stafford, et al., describe the relationship between smoking at the time of an index cardiac event (PTCA, myocardial infarction, or coronary bypass graft surgery) and subsequent measures of depression at 3 months, 6 months, and 9 months. Smoking increased the likelihood of a diagnosis of major depressive disorder, or a diagnosis of minor depression, dysthymia, or major depressive disorder, at 3 months, but not at 6 months or 9 months. The authors conclude that smoking is an independent risk factor for the subsequent development of depression in patients with coronary disease, especially in the first three months following a cardiac event.

The question posed by the investigators is important in understanding the relationships between smoking, depression, and coronary heart disease. The methods are appropriate and well-described. The findings are interesting, the data are presented clearly, and the manuscript is well-written.

Major compulsory revisions:

1. It is this reviewer’s opinion that the authors’ conclusions are not fully justified by the data, and should probably be modified. Although an association between smoking and subsequent depression is demonstrated, the interpretation that depression results from tobacco use is not well founded in the absence of data on depression status before or at the time of the index event. An equally plausible explanation of the findings is that depression led to tobacco use, and that smokers had more depressive symptoms even before their cardiac events.

2. The participants should be more fully characterized. It is unclear, for example, how many of the study cohort presented with myocardial infarction, or with revascularization via a percutaneous procedure or surgery. Similarly, there is no data regarding treatment of the subjects. In particular, it would be instructive to know how many were treated with anti-depressant drugs, and how many were started on anti-depressants following their index cardiac events.

3. It is not clear that patients who had coronary bypass graft surgery should be grouped with those who experienced a myocardial infarction or underwent percutaneous revascularization, in light of the potential for bypass surgery to alter cognitive function. The authors should examine whether their findings are
consistent amongst subjects with different presentations.

Discretionary revisions

1. There is no description of exercise patterns or participation in cardiac rehabilitation programs in the study cohort. Exercise may be as effective as anti-depressant medications in improving mood in coronary disease patients. If available, this data should be presented.

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.