Reviewer's report

Title: Effect of Fagonia Arabica (Dhamasa) on in vitro thrombolysis

Version: 1 Date: 18 April 2007

Reviewer: Roy Hantgan

Reviewer's report:

General

1. Is the question posed by the authors new and well defined?

This manuscript addresses important issues about the use of herbal medicines for the prevention and treatment of cardiovascular disease. The authors have focused on six herbal extracts that are commercially available and that have been traditionally used as treatments for a range of thrombotic and neurological disorders. By carefully investigating the effects of these preparations in an in vitro clot lysis assay, they have obtained interesting results indicating significant thrombolytic activity in an extract of Fagonia Arabica.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

The experimental procedures employed in this work have been carefully designed for the tasks at hand and are fully described. The authors’ attention to detail in the extraction procedures and the clot lysis assay are noted as a special strengths of this study. While they point out that the active ingredient(s) of the Fagonia Arabica extract have not yet been identified, they have compared the effects of 6 herbal preparations all treated in the same manner and have found significant activity in only one.

3. Are the data sound and well controlled?

Results are based on 20 replicate clot lysis assays, each obtained with blood from a volunteer donor. Streptokinase was used as a positive control and water as a negative control; this provides a standard for comparison of the potency of the herbal extracts. Results are reported as mean +/- standard deviation and all data are compared to the negative control (water) by the t-test. The authors have employed stringent criteria for significance; although all 6 extracts yielded clot lysis indices with p<0.05 compared to the negative control, they have focused their attentions on the one (Fagonia Arabica) that exhibited ~88% of the activity of the positive control.

One concern is why they did not consider in more detail the effects of the Bacopta monnieri extract that exhibited nearly 50% of the activity of SK.

A minor point is their presentation of results to as many as 4 digits beyond the decimal point, even though the variation in those parameters was much larger.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

The data are fully described in the text, tables and figure.

5. Are the discussion and conclusions well balanced and adequately supported by the data?

Overall, the conclusions are adequately supported by the data presented and the authors cite published reports about other herbal medications.

However, serious concerns are raised by comments, in both the Introduction and the Discussion, that herbal remedies have fewer side effects than pharmaceutical thrombolytic agents. In the absence of large scale, phase III clinical trials of herbal medications, this conclusion cannot be accepted. While in some cases, the authors temper their statements with qualifying phrases such as “…it is claimed…”, the statement in the Introduction about fewer side effects of herbal preparations is supported only by WHO guidelines, not by peer-reviewed publications.
6. Do the title and abstract accurately convey what has been found?

The title and abstract clearly convey the results of this study.

7. Is the writing acceptable?

Yes, the writing style is clear and concise.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

The authors should reconsider and revise their comments about the side effects of herbal remedies compared to pharmaceuticals.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

None

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Discretionary Revisions (which the author can choose to ignore)

The authors should present the data in Table 1 to no more than 2 decimal points.

The authors are encouraged to comment in more detail on the significance of the effects of the Bacopta monnieri extract that exhibited nearly 50% of the activity of SK.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

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.