Reviewer’s report

Title: Evaluation of decision-support software in Carcino-Embryonic Antigen (CEA)-based follow-up of colorectal cancer patients

Version: 2 Date: 2 October 2011

Reviewer: Dimitri Aristotle Raptis

Reviewer’s report:

I would like to congratulate the authors for such a timely and interesting study. This is a relatively novel study with a high practical significance. The authors have developed a simple software to assist in the high volume and cumbersome follow-up of patients with colorectal cancer. Although the study design was not optimal, some findings of this study may help with the design of a randomised controlled trial. Furthermore, most of the important limitations of this study are well addressed by the authors in the “conclusions” section.

I would support the publication of this study as long as the following issues are addressed in the manuscript:

Major:

1) The authors should indicate whether this software was integrated in the hospital EPR system or not. If not, this should be included in the limitations section of this paper.

2) This paper lacks a discussion section. The discussion and conclusions of the manuscript are not well balanced and not adequately supported by the data. Within this section, there should be a separate paragraph indicating all the limitations of this study. Within the discussion section, the authors should provide more information of similar software available in the literature (such as follow-up software).

3) The authors should provide a demo version of the software without real patient data available in the internet. They should also state that the software is freely available for non-commercial use (note that this is a condition of publication) and if the availability of the software and any restrictions on its use exist.

4) The title is misleading: The title reads “Evaluation of decision-support software…” However the authors did not formally evaluate the software. The word “evaluation” should be removed from the title and the title must be rephrased.

5) Already partially presented data available in the internet: The authors should declare in the “cover page” that this study was partially presented at a conference. Please see: http://www.slideshare.net/ESOSLIDES/150211-1430-havenga

6) The authors should include the following issues in the “limitations section” of the paper:
a) Selection bias: not a randomised control trial. (The fact that it is not an RCT is mentioned in the conclusions section, however the implication of the selection bias of the patient recruitment is not clearly mentioned. This should allow the readers to interpret the findings with caution).

b) Lack of a proper software evaluation: The evaluation of the software was not scientifically sound. The authors simply performed some unstructured interviews of surgeons. The patients, outpatient clinic nurses, etc were not involved. This should also be mentioned in the limitations section. The authors are also stating the their evaluation had “face validity” but such information is not reported in the paper. How was face validity assessed?

c) Lack of user friendliness data.

d) Lack on data regarding the software implementations and potential difficulties.

e) Lack of patient survival data: The authors did not report whether there were differences in the 3 or 5 year patient survival between the two groups. If the data are not available, this should be mentioned in the limitations section. The reason for this is that if the survival is worse in the CEAwatch group, this should be an alarming finding when it comes to automated software driven patient follow up.

Minor:

• The authors should acknowledge the IT specialists that helped with the development of this software

• The authors are referring to patient with colorectal cancer as: “Colorectal cancer patients” This is degrading to the patients and should be changed to “Patients with colorectal cancer”.

• Colonoscopy findings: This software did not include follow-up colonoscopy data. Where the patients followed up with for example a 3-year follow-up colonoscopy? These data may change the frequency of CEA measurements.

• Some patients may have a CEA negative colorectal cancer recurrence. These patients would be missed by the software follow-up. This should be mentioned in the discussion section.

**Level of interest:** An article of importance in its field

**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.