Author’s response to reviews

Title: Use and Abuse of Fecal Occult Blood Tests: A Community Hospital Experience

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Version: 1 Date: 17 Aug 2019

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Diana Sacchi, Reviewer 1:

This paper by Soin et al. focuses on the "inappropriate" application of fecal occult blood test (FOBT), which is the most important test in colorectal cancer (CRC) screening, and is often included as the first step in a screening protocol due to its cost-effectiveness and non-invasiveness.

I would like to suggest minor points to consider in subsequent version:

* Table 4; "inappropriate" column: "225 patients aged <75 years". As written in the paper, according with the American Cancer Society Colorectal Cancer Screening Guidelines (ACS) (January 2018), the appropriateness of FOBT considered as one criterion age from 50-75 years. Thus, probably Authors would like to write "225 patients aged >75 years".

* Reviewer recommendation has been taken into account and correction have been made in table 4 “225 patients aged >75 years".
You have written in the article: "This study also highlights the burden of unnecessary procedures as a result of the inappropriate FOBT testing" and it could be absolutely true but it is not clearly demonstrated in your study. It would be interesting to know how many patients still have the indication to undergo a colonoscopy (or imaging tests to look for CRC) in the "potentially-inappropriate" group, despite the positive result of FOBT. Indeed, It is important in a cost-effectiveness point of view to not perform inappropriate FOBT but It is important to consider in your study if the positive result of FOBT surely increases the number of subsequent procedures.

Reviewers recommendation has raised an important point, however the specific data regarding indications to pursue colonoscopy for reasons in addition to positive FOBT in the appropriate group were not collected. Authors have included the following lines in under discussion paragraph 6, line 3 “A total of 3 colon cancer were found in the inappropriate group, although it is important to consider none of the FOBT testing was performed for this reason specifically.”

Holger Schäffler, MD (Reviewer 2):

The fecal occult blood test is an important screening method in order to detect colorectal cancer. However, its misuse plays an important role in daily clinical practice. Soin et al have shown in their manuscript in a retrospective analysis of 729 patients, that no FOBT was used in order to screen for CRC. They also showed that it was mainly used to test for anemia. Use of inappropriate medication prior to testing was frequent.

Although this retrospective study is interesting, several questions arise:

1) Which test was used - gFOBT or iFOBT? Which manufacturer? Which specific test? Since the manuscript is based on this screening method, this should be described more precisely.

   • gFOBT (Hemoccult II, Beckman Coulter, CA, USA) was the test used. Information regarding the test has been added under methods paragraph 1 line 5.

2) The most common indication for FOBT was anemia. Can the authors give more information about the anemia - were they microcytotic? Was iron-deficiency found? Did they check for vitamin B12 / folate efficiency?
• Information regarding subtypes of anemia were not collected during the study. Only presence of acute anemia when documented was collected.

3) 259 patients had a positive FOBT, but only 73 underwent diagnostic colonoscopy - The authors do not comment on this gap. Why did only 73 patients receive a colonoscopy? Why did the rest of the patients not receive colonoscopy?

• “For remaining 186 patient’s colonoscopies were not pursued after discussion with the gastroenterology service and/or if there was high likelihood of false positive FOBT.” Under results, paragraph 3, line 5 has been added.

4) The figure legends are not giving enough information’s and should be extended.

• “Figure 1. Composite analysis showing distribution of various findings among the entire study population.

• Figure 2. Sub analysis of the FOBT positive population showing distribution of gastroenterology consultation, active GI bleeding and colonoscopies.

Reviewer suggestions has been taken into account and figure legends have been expanded.

5) The authors state, that no FOBT was performed for CRC screening. In Table 5 and also in the text they distinguish between appropriate and inappropriate FOBT testing. This should be discussed more carefully.

• “In our study we define potential appropriateness as population that would have been eligible for colorectal cancer screening as per current recommended guidelines.” Under methods, paragraph 4, line 5. The above-mentioned line has been added to the manuscript in order to better define the appropriateness criteria.

6) Table 4 shows the study population. How many patients between 50 and 75 had bleeding and were on antiplatelet therapy / oral anticoagulants?

• Data regarding the patients between 50 and 75 had bleeding and were on antiplatelet therapy / oral anticoagulants was not calculated following data collection. As the patients who had GI bleeding in the above-mentioned age group and those on medication were calculated separately to prevent overlap during the calculations.