Author's response to reviews

Title: Detection of small (<2 cm) pancreatic adenocarcinoma and surrounding parenchyma: correlations between enhancement patterns at triphasic MDCT and histologic features.

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Version: 3 Date: 14 November 2013

Author's response to reviews:

Dear Editor, please find enclosed the revised manuscript entitled “Detection of small (<2 cm) pancreatic adenocarcinoma and surrounding parenchyma: correlations between enhancement patterns at triphasic MDCT and histologic features” for publication on BMC Gastroenterology journal.

Sincerely
Michele Scialpi
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Reviewer's report

Title: Detection of small (<2 cm) pancreatic adenocarcinoma and surrounding parenchyma: correlations between enhancement patterns at triphasic MDCT and histologic features.

Version: 2 Date: 17 September 2013

Reviewer: Maria Antonietta MD Mazzei

Reviewer's report:

Major comments
1) The manuscript is well structured and the question posed by the authors is well defined.
DISCRETIONARY REVISIONS:

1. Histological evaluation “The surgical specimens of the duodenal-cefalopancreatectomy or pancreatectomy were examined for the PDA (n=38) and pancreatic parenchyma upstream (n=38) and downstream (n=25) to the tumor”. It is not immediately clear why the histological examinations are available in only 25 cases for downstream parenchyma. Could the Authors explain this point?

The corrected sentence is: “The surgical specimens of the pancreaticoduodenectomy, distal pancreatectomy or total pancreatectomy were examined for the PDA (n=38) and pancreatic parenchyma upstream (n=38) and downstream (n=25) to the tumor. The surgical specimens for pancreatic parenchyma downstream to the tumor were not available in 13 patients because, in these patients, the PDA was localized in the uncinate process”.

2. Multislice CT protocol: line 17, beam pitch instead of pitch; change made as indicated by the reviewer.

3. Discussion: A lot of articles regarding the use of CT perfusion for detection of PDA are available in recent literature. Could the authors introduce this point in the section of discussion, making the limit of this technique regarding this diagnosis clear?

The point has been introduced “Moreover, a lot of articles regarding the use of CT perfusion for detection of PDA are available in recent literature [19]. However, although computed tomographic perfusion (CTp) imaging is a promising technique that allows functional imaging, as an adjunct to a morphologic CT examination, the measurements obtained with the CT perfusion software, and their upgrades, are not currently consistent and reproducible”.

The following reference should be useful to the Authors.

The reference is added as suggested by the reviewer.

MINOR ESSENTIAL REVISIONS:

1. MATERIAL AND METHODS: Methods are appropriate and well described and the data is sound.

Image Analysis: lines 23-24: “An attempt was made to maintain a constant ROI area…” Please specify how the Authors attempted to maintain the same ROI
area: this is fundamental to avoid computing bias.

Image analysis: lines 32-35 “A positive difference of enhancement indicates that the lesion is hyperdense compared with surrounding parenchyma and vice versa. When the difference in attenuation between the lesion and parenchyma upstream or downstream presents values <10 HU, the lesions not recognizable (PDA so called “isodense”)... It should be revised as follow...”A positive difference of contrast enhancement indicates that the lesion is hyperdense compared with surrounding parenchyma and vice versa. When the difference in attenuation between the lesion and pancreatic parenchyma upstream or downstream to the lesion presents values <10 HU, the lesions was defined as unrecognizable (PDA so called “isodense”)”

change made as indicated by the reviewer.

4. Image analysis: lines 36-38: “After the assessment of PDA and pancreatic parenchyma up-/downstream to the tumor attenuation, the time-density curves (TDCs) of PDA and pancreatic parenchyma up-/downstream in each patient were generated and categorized in three patterns” ...It should be revised as follow...”After the assessment of PDA and up-/downstream pancreatic parenchyma to the tumor attenuation, the time-density curves (TDCs) of PDA and up-/downstream pancreatic parenchyma in each patient were generated and categorized in three patterns”;

Please pay attention to this correction for the entire manuscript.

change made as indicated by the reviewer.

5. DISCUSSION: Discussion is well balanced and adequately supported by the data.

“In our study, type 1 pattern (normal pancreas) was observed in downstream pancreas (19/25 cases; 76%), type 2 pattern (mild chronic pancreatitis) was observed in PDA (5/38 cases; 13,2%), in downstream (6/25 cases; 24%) and in upstream pancreas (20/38 cases; 52,6%), and type 3 pattern (severe chronic pancreatitis) was identified in PDA (33/38 cases; 86,8%) and in pancreas upstream (18/38 cases; 47,4%). At qualitative analysis small PDA was isodense to the pancreas upstream to the tumor on PPP in 10/38 (26.3%), on PVP in 12/38 (31.6%) and on DP in 22/38 cases (57.9%). At quantitative analysis isoattenuating small PDA was observed in 7/38 (18.4%) on PPP, in 9/38 (23.7%) on PVP and in 21/38 (55.3%) on DP and was related to a similar pattern (mild or
severe pancreatitis of upstream pancreas and mild and abundant fibrosis in PDA).

This part has also been reported in the results section; the Authors should extract the essential useful data for the discussion to avoid repetitions.

change made as indicated by the reviewer.

6. STUDY LIMITATIONS: limitations of the work are clearly stated. Please provide the exact number of histologically proven PDAs.

The corrected sentence is “1) the retrospective nature of the study including a limited (38/127) selected patients with histologically proved PDA in which the relationship between enhancement and histopathology was obtained; ”

7. TABLE :
TABLE 1. Please include what value is reported in brackets in the legend.
TABLE 2. Please change the legend because it does not represent the value in terms of percentage (that is in brackets) but in terms of ratio.
TABLE 3. OK
TABLE 4. Please include what value is reported in brackets in the legend.

DIAGRAM 1. OK
DIAGRAM 2. Please include the extent of “L/up” and “L/Down” in the legend.

CAP please replace “enhamcment” with enhancement.

change made as indicated by the reviewer.

8. REFERENCES: The style and composition are well structured, they match the Authors’ guidelines for references.

change made as indicated by the reviewer.

9. Statistical review: statistically sufficient
Level of interest: An article of outstanding merit and interest in its field
Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
'I declare that I have no competing interests' below.

ITIONS FOR ILLUSTRATIONS: FIGURE 1. OK, FIGURE 2. 3rd phrase,
Title: Detection of small (< 2 cm) pancreatic adenocarcinoma and surrounding parenchyma: correlations between enhancement patterns at triphasic MDCT and histologic features.

Reviewer: Marcella Arru
Reviewer's report:
No Major Compulsory Revisions.

Minor Essential Revisions:
1. Some abbreviations are not defined in the text:
   - CT (computed Tomography): in “Introduction”, 2nd paragraph
   - MSCT (Multislice CT?): in “Multislice CT protocol”, 1st paragraph
   - HU(Hounsfield Unit); in “Multislice CT protocol”, 2nd paragraph
   - kVp and mA: in “Multislice CT protocol”, 3th paragraph

   Change made as indicated by the reviewer.

2. Typing missing/errors:
   - In “Images analysis”, 6th paragraph: “When the difference in attenuation between the lesion and upstream or downstream parenchyma presents values <10 HU, the lesions ARE note recognizable...”
   - In “Statistical analysis”, 1st paragraph “(in HU# } SD)”: its means: “mean ± SD”?
   - In “Results”, 2nd and 3th paragraphs: “hypo-” is “hyperdense”

Discretionary Revisions
1. In “Materials and methods,” “Patient selection”- first paragraphs and “Histological evaluation” - first paragraph: Pancreatic surgery is better defined as: “pancreaticoduodenectomy, distal pancreatectomy or total pancreatectomy”
2. In “Discussion”, 10th paragraph: “The quantitative analysis at triphasic MDCT increases tumor detection with respect to visual analysis (sensitivity=100% versus 92.1%)”: It is not clear which are the data in “Results” that support 92.1% sensitivity of visual analysis.
3. In “Discussion”, 11th paragraph: A limit of the study consists, not only in its retrospective nature, but also in the characteristics of patients enrolled in the study, which were all surgically treated patients for a small PDA detected at MDCT, not including patients with an hypothetical misdiagnosis.
4. In “Discussion”, 12th paragraph: The correlation of the histologic features (available obviously only postoperatively) with enhancement patterns at CT could
be essential for improve research on methods to detect isoattenuating PDA, but can not have a direct clinical practical role. I suggest to delete “in the clinical practice”.
Change made as indicated by the reviewer.

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.