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 parenchima. Could the Authors explain this point?
2. Multislice CT protocol: line 17, beam pitch instead of pitch;
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 following reference should be useful to the Authors.


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”).

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.

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.

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

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

CAPTIONS FOR ILLUSTRATIONS: FIGURE 1. OK, FIGURE 2. 3rd phrase, please replace “enhacment” with enhancement.
8. REFERENCES: The style and composition are well structured, they match the Authors’ guidelines for references.

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.