Reviewer’s report

Title: Predictive Value of Metabolic 18FDG-PET Response on Outcomes in Patients with Locally Advanced Pancreatic Carcinoma Treated with Definitive Concurrent Chemoradiotherapy

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Reviewer: Anthony F Shields

Reviewer’s report:

The authors have studied the use of 18F-FDG PET (fluorodeoxyglucose positron emission tomography) for the evaluation of patients with locally advanced pancreatic carcinoma (LAPC) who are to receive chemoradiotherapy. In this study they have evaluated the use of PET in staging these patients as well as assessing treatment response, measured as overall survival, and rate of resection. They provide some useful data on the use of PET in this group of patients, but some clarifications are needed.

Minor Essential Revisions

1- When during the 12 weeks post-radiation was PET done? They report that they gave the gemcitabine on 3 week cycles for 4-6 course or 12-18 weeks. So were all PETs done at completion or during the gemcitabine?

Major Compulsory Revisions

2- Their division of responding and non-responding patients seems arbitrary. They said they split patients “response greater versus lesser than the mean difference.” It is not clear that this is the best division. In fact, they point out that this divided their patients into 21 patients with a better PET response and 11 with a poorer response. How about using the median difference, which would divide these into two equal groups or ROC analysis to pick the cut point?

3- They used the SUVmax as their measure of activity, but this really just represents a single pixel over the whole tumor. It can be subject to significant noise. Furthermore, it may be hard to generalize SUVmax from one scanner to another since the pixel size and resolution can vary. Did they also try to use SUVpeak or some variation of SUVmean? This would be very helpful. Some investigators have also tried other approaches such as total metabolic volume (SUV x volume), but this still requires one to set some boundaries on the tumor.

4- The definition of locally advanced and unresectable pancreatic cancer is often confusing and varies from physician to physician. How did they define it? All they state is that “Disease extent was determined by radiological studies and laparoscopy/laparotomy.” What imaging studies were done, e.g. did they do CT with a pancreatic protocol, MRI, EUS? How many patients were judged unresectable by imaging alone vs at laparotomy?
5-Table 1 should be deleted, since they just give the EORTC PET response criteria and is not needed in this manuscript. Given the limited number of patients in the study a table summarizing the results in each patient would be helpful. This could include the baseline and post-treatment SUV, the PFS and OS and resection results. This way others could plot and analyze the data as they saw fit.

**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.