Reviewer's report

Title: Grey scale enhancement by a new self-made contrast agent in early cirrhotic stage of rabbit liver

Version: 2 Date: 5 March 2007

Reviewer: John H Kalbfleisch

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General

In order to judge manuscript conclusions, the description of the experimental design, the statistical procedures used and the presented results should link together appropriately. The reader is going to have difficulty connecting these parts of the manuscript and in deciding that the data analysis is correct.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Statistical data analysis needs to be performed correctly.

Methods identify 12 animals but Table-1 shows 47 values were used to obtain summary statistics over 5 stages (F0 through F4) for each of 2 outcomes (HVAT, HA-HVTT). Therefore, some animals contribute multiple values and animals did not contribute to every stage. Moreover, at each of 3 time points, several (representative) blocks were used in each biopsy. The comparison of stage mean levels (Table-1) should be accomplished with ANOVA that identifies and accounts for all of the study design factors (animals, stage, and possibly other factors once the design is fully described). Next, pair-wise comparisons among the stage mean levels would be performed by a method compatible with the initial ANOVA result (significance or non-significance of the stage-factor could be used to select the pair-wise testing procedure).

The nonparametric methods stated in methods compare group medians, however, medians are absent in the results. Importantly, 47 values for 12 animals indicates that the animal-factor was ignored during data analysis (also suggested by the choice of the Mann-Whitney test - which is for independent data sets, not dependent data sets). At a minimum, the analysis of each outcome must account for the animal-factor and the stage-factor. The methods section must identify the statistical analysis procedure(s) and indicate the software employed.

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Minor Essential Revisions

Results, first sentence: "40-day" should be "60-day."

Several other similar word or wording alterations are in order.

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Discretionary Revisions (which the author can choose to ignore)

(this could also be a major compulsory revision)

Since a deterioration in outcome level (HA-HVTT, HVAT) is observed from F0 to F4, the authors should consider presenting a figure shows individual animal trends in outcome over the stages (X axis = F0, F1, F2, F3 and F4; plot each animal outcome and then link those together
with a solid line or dotted line); finally, superimpose the mean level at each of F0 through F4). This will show the reader whether the reduced response is observed in each animal, or whether there are a few animals that report large decreases in outcome while other animals show lesser (or no) decreases. This figure would also show how outcomes distribute at each of F0 - F4. Statistical significance findings can be added to the figure or put in the figure legend.