

Referee Comments

Referee 1

Referee's Comments 1:

Since this is an ex-vivo study it is difficult to assess the real efficacy of thermal ablation. The change in tissue color is not an accurate representation of the extent of thermal ablation in-vivo. A precise test for determination of efficacy of ablation is the demonstration of cell death on histopathological evaluation. Given the study design, this is not possible. Therefore, the authors should explicitly mention this in the limitations part of the discussion.

Reply to Referee's Comments 1:

The liver blocks containing lesions were dissected along the axis along which the electrode was inserted, and the central white area of the RF-induced ablation zone was found to correspond to the necrotic zone (Lee JD, Lee JM, Kim SW, Kim CS, Mun WS. MR imaging-histopathologic correlation of radiofrequency thermal ablation lesion in a rabbit liver model: observation during acute and chronic stages. *Korean J Radiol* 2001;2:151-817). For macroscopic examination, two observers used calipers to measure, in the central white area of coagulation necrosis in each pathologic specimen, the overlapping width, the longest diameter of each ablation sphere along the electrode, and the shortest diameter at the midpoint between the two electrodes (Lee JM, Han JK, Kim SH, Sohn KL, Lee KH, Ah SK, Choi BI. A comparative experimental study of the in-vitro efficiency of hypertonic saline-enhanced hepatic bipolar and monopolar radiofrequency ablation. *Korean J Radiol*. 2003 Jul-Sep;4(3):163-9. PMID: 14530645 <http://dx.doi.org/10.3348/kjr.2003.4.3.163>).

Referee's Comments 2:

2. *Another drawback of the study is that sample size is too small to test for reproducibility and reliability. The authors seem to have used one bovine liver sample for each ablation (I have assumed this since the authors have not elaborated on this in the methods section). As a consequence it is not*

possible to test if the results are reproducible if repeated.

Reply to Referee's Comments 2:

In this study, this is an experiment and ex vivo, in Data Analysis and consider a stable, reproducible there.

Referee's Comments 3:

3. *The introduction section needs revision. The authors need to elaborate on the clinical relevance of extending the ablation margin, the value of fluid infusion during ablation procedure and the intent of the study.*

Reply to Referee's Comments 3:

We revised Introduction section. We add the intent of the study.

Referee's Comments 4:

4. *There is lack of information in the methods section. How many bovine liver samples were used for the study? Did the authors perform a single ablation for each ablation (i.e. with saline and glucose)?*

Reply to Referee's Comments 4:

Fifteen bovine liver samples were used for this study. Furthermore, single ablation maintained at each diameter for 7 min.

Referee's Comments 5:

5. *More information is needed in the methods section on the nature of the liver specimens? How were the liver specimens obtained? What were the storage conditions of the liver tissue after removal from the animals? How were the storage conditions standardized for different liver samples?*

Reply to Referee's Comments 5:

We added ass below.

One to two kilograms of bovine liver form an abattoir was used which had been exposed to room temperature for several hours until the baseline mean liver temperature ranged between 15°C and 21°C

Referee's Comments 6:

6. *How was the measurement of the ablation zone done? Who performed the measurement? Did the liver specimens undergo pathological evaluation? More details should be provided on the method of estimation of the ablation volume.*

Reply to Referee's Comments 6:

We added as below in MATERIALS AND METHODS..

specimens were sectioned along the longitudinal and transverse axes of each lesion. Measurement of the coagulation diameter perpendicular to the electrode axis was based on consensus of two observers (T.I., T.K). Macroscopic changes in specimens have been demonstrated to correlate well with coagulation necrosis at histological examination [McGahan JP, Griffey SM, Budenz RW, Brock JM. Percutaneous ultrasound-guided radiofrequency electrocautery ablation of prostate tissue in dogs. Acad Radiol. 1995 Jan;2(1):61-5. PMID: 9419526] Furthermore, the central white area of the RF-induced ablation zone was found to correspond to the necrotic zone (Lee JD, Lee JM, Kim SW, Kim CS, Mun WS. MR imaging-histopathologic correlation of radiofrequency thermal ablation lesion in a rabbit liver model: observation during acute and chronic stages. Korean J Radiol. 2001 Jul-Sep;2(3):151-8. PMID: 11752986

Referee's Comments 7:

7. *Please include a limitations section in the discussion section.*

Reply to Referee's Comments 7:

We included limitation in Discussion section.

Referee's Comments 8:

8. *This study does not take into account the changes in the tumor ablation margin which can occur with intact vascularity. This has to be mentioned in the limitations section.*

Reply to Referee's Comments 8:

We included limitation including vascularity and ex vivo study in Discussion section.

Referee 2

Referee's Comments :

Interesting study using the Starburst RFA device and infusion saline and dextrose to study differences in burn volume with RFA. Would have been useful to also see comparisons between differing infusion rates as well as comparisons with other RFA probes. However, as a simple study on its own it is publishable. For those readers not familiar with the Starburst device, a picture might be a useful illustration to explain its design.

Reply to Referee's Comments:

We added a picture of Starburst device as Figure 1.

Comment 1

Title should be no more than 10~12 words/60 bytes. Please revise it.

The title should not include shortened form. Please modify it. Thank you!

Reply to Referee's Comments:

We revised title.

Comment 2

Please provide the postal code.

Reply to Referee's Comments:

We provide the postal code.

Comment 3

Please provide the author contributions. See the format in the attachment file-revision policies. The format of this section should be like this:

Author contributions: Wang CL, Liang L and Wu XM designed research; Xue Jz and Lu JR contributed new reagents/analytic tools; Wang CL, Liang L and Fu JF analyzed data; and Wang CL, Liang L and Fu JF wrote the paper.

Reply to Referee's Comments:

We provide the author contributions.

Comment 4

An informative, structured abstracts of no more than 480 words should accompany each manuscript. Abstracts for original contributions should be structured into the following sections. AIM (no more than 20 words): Only the purpose should be included. Please write the aim as the form of "To investigate/study/...;

Reply to Referee's Comments:

We revised.

Comment 5

It's too short. Please add it to 120 words. Thank you!

You should present P value where necessary and must provide relevant data to illustrate how it is obtained, e.g. 6.92 ± 3.86 vs 3.61 ± 1.67 , $P < 0.001$;

Authors should present exact P value where necessary and must provide relevant data to illustrate how it is obtained, e.g., 6.92 ± 3.86 vs 3.61 ± 1.67 , $P = 0.002$. Otherwise, it is not accepted.

Reply to Referee's Comments:

We added the result data.

Comment 6

Please add 5-10 key words here words that could reflect content of the study mainly from Index Medicus.

Reply to Referee's Comments:

We added key words that could reflect content of the study.

Comment 7

Please reformat all the reference numbers like this one ([1]→ctrl+shift+=). Please check throughout. Thank you!

Reply to Referee's Comments:

We reformat all reference numbers.

Comment 8

*Please add PubMed citation numbers and DOI citation to the reference list and list all authors. Please revise throughout. The author should provide *the first page* of the paper without PMID and DOI.*

PMID (<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed>) DOI

[\(http://www.crossref.org/SimpleTextQuery/\)](http://www.crossref.org/SimpleTextQuery/) (Please begin with DOI: 10.**)

For those references that have not been indexed by PubMed, a printed copy of the first page of the full reference should be submitted.

Reply to Referee's Comments:

We add PubMed citation numbers and DOI citation to the reference as long as it is possible.

Comment 9

At least 26 references should be included.

Reply to Referee's Comments:

We included adding references.

Comment 10

A decomposable figure is required. It means that the fonts and lines can be edited or moved. The example is attached.

*The coordinate graphs supplied should be **decomposable** (each part of your figure could be moved so as to easily edited). You can send it as excel, word or powerpoint format so that I can edit them easily.*

Reply to Referee's Comments:

We send it as powerpoint format so that you can edit them easily.

Comment 11

*The coordinate graphs supplied should be **decomposable** (each part of your figure could be moved so as to easily edited). You can send it as excel, word or powerpoint format so that I can edit them easily.*

If it isn't decomposable please provide figures no smaller than 85 mm in height and 126

mm in width, and at a resolution of 300 dpi as TIFF format.

Reply to Referee's Comments:

We send it as powerpoint format so that you can edit them easily.

Comment 12

It is too simple. Please put the content into the body text and delete it.

Reply to Referee's Comments:

We need this Table. Please contain this Table.