OPEN PEER REVIEW

Open Peer Review (OPR)

As a new feature for progressing towards transparency, we decided to open a new window for all of our editors as well as authors titled "**Open Peer Review**". We hope by this new facility, our reviewers will be more motivated and authors will be more satisfied with the review process. We believe that publishing our peer review reports could make a transparent and clear environment for all our efforts within a journal, but not all reviewers tend to publish their comments.

What is "Open Peer Review" process?

An "Open Peer Review" process is making the details of all review process (including reviewers, associate editors, and EICs comments) as "Public" as it is agreed by EIC, Authors, and reviewers.

Advantages of "Open Peer Review" process

- More transparency, constructiveness and tactful comments of the peer review process: leads to an increase in the quality of reviews
- More motivations for all involved roles in the review process
- Authors' satisfactions from the review process: Increases honesty between authors and reviewers
- Education of both authors and new students
- Prevents reviewers from following their individual agendas and leading to the detection of reviewers' conflicts of interests

You can find out more at:
https://sites.kowsarpub.com/kowsar/knowledgebase/category/tree.html#opr.html

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Peer Review Report for "Can Diffusion-Weighted Imaging be a Gold Standard Method for Acute Appendicitis? A Comparative Study"

Author(s): Serdar Serinsoz, Remzi Akturk

Review Timeline:

Submit Date: 6 Feb 2021
Revised Date: 16 Aug 2021
Accepted Date: 28 Aug 2021

Revision (0)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (0) — 16 Feb 2021

Dear AE,
According to the methodology point of view, it must be said that the statistical analysis and results presentation of the study is not appropriate. The following points must be considered and edited:
1. The purpose of this study was to compare three radiological methods. For this purpose, all 70 samples should be examined by all three methods, and the results should be compared with the gold standard. But the second paragraph of the results section does not mention this issue? In this case, the accuracy of methods can not be compared with each other.
2. To compare the accuracy of the methods, it must be calculated and compared the sensitivity and specificity using ROC curve analysis; but here, it was not used?
3. For results presentation: It is better the demographic and clinical data of samples, to be presented in the first section, and so by table.
Thanks.

Neda Pak: Reviewer | **Revision** (0) — 23 Feb 2021

Dear AE,

I reviewed the manuscript entitled “Can diffusion-weighted imaging be a gold standard method for acute appendicitis? A comparative study”. These days using of MRI is increasing for diagnosing acute appendicitis which shows the importance of doing more studies on this issue, I have some questions and comments regarding this study. There was ambiguity in the methodology of the study, please the authors clarify the following questions.

1) Have you performed CT, US, and DWI MRI on all patients? I mean whether all three modalities were used for all patients? If not, please clarify by the detail that how many underwent which imaging modality? How many had two modalities? And which modalities were compared? Did you have any negative cases in CT scan but positive in MRI?

2) How did you compare the accuracy of imaging modalities? Your title mentioned that it is a comparative study!

3) As you know DWI sequences are not proper sequences for measuring the diameter of the appendix because the peripheral inflammation may be measured as well, how did you measure the diameter of the appendix as just a one-millimeter difference can alter the diagnosis?

4) You mentioned that just DWI and ADC map sequences are performed but in figures, you have used T2 w images, please clarify that.

5) There are many charts and graphs which are not necessary and you don’t need to bring the chi-square analysis tables in your article, please sum your data just in one or two tables and note that charts are not figures, you named them figures which must be changed.

6) You didn’t mention anything about appendicitis complications in your cases, please add them too.

7) You mentioned that in overweight patients, NECT may be false negative, what is your reason and reference? As in discussion you have written that there was no difference! And we know that having more fat will make visualization of bowel loops easier!

8) In the discussion you have written by mistake that appendicitis referred to diameter of the appendix less than 6 mm, which must be corrected to more than 6 mm.

9) There are writing and grammatical mistakes which need English writing revision.

Thanks.

REFEREE: Associate Editor | **Revision** (0) 27 Mar 2021

Dear EIC,

Thanks for submitting this manuscript to the Iranian Journal of Radiology. Based on reviewers, this work needs major revision.

Best regards

REFEREE: EIC | **Revision** (0) 27 Mar 2021

Dear authors,

Your article needs Major Revision.

Regards

OPEN PEER REVIEW

Revision (1)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

RESPONSE FOR QUERIES

We thank the reviewers and editor for their thoughtful comments. Our point-by-point response follows, including additional explanations.

Reviewer(s)' Comments to Author:

Reviewers' Comments:

Reviewer 1:

Dear Authors

I reviewed your manuscript entitled as “Can diffusion-weighted imaging be a gold standard method for acute appendicitis? A comparative study”. These days using of MRI is increasing for diagnosing acute appendicitis which shows the importance of doing more studies on this issue, I have some question and comments regarding your study. There was ambiguity in methodology of your study, please clarify following questions.

Q1) Have you performed CT, US and DWI MRI on all patients? I mean whether all three modalities were used for all patients? If not, please clarify by details that how many underwent of which imaging modality? How many had two modalities? And which modalities were compared? Did you have any negative cases in CT scan but positive in MRI?

R: US, NECT and DWI-MRI were all applied to all patients included in the study.

Q2) How did you compare the accuracy of imaging modalities? Your title mentioned that it is a comparative study!

R: Imaging findings were compared with the operation results of the operated patients.

Q3) As you know DWI sequences are not proper sequences for measuring the diameter of appendix because the peripheral inflammation may be measured as well, how did you measured the diameter of appendix as just one millimeter difference can alter the diagnosis?

R: Among the MR sequences, T2W and STIR / TIRM sequences were practically used to guide diffusion MRIs. STIR / TIRM sequences were used to facilitate the visualization of appendix segments, to detect accompanying inflammatory fluid, and to identify possible additional pelvic anomalies in all examinations, especially those with retrocecal type localization. T2W sequences were used multiplanarly for optimal diameter measurement. Diameter measurement was recorded in each patient by measuring the thickest segment after the radix of the tubule appendix, from the outside to the outside and on the short axis in the appropriate plan.

Q4) You mentioned that just DWI and ADC map sequences are performed but in figures you have used T2 w images, please clarify that.

R: In order to emphasize the significance of diffusion statistically, it was not included in the data in the comparison tests. However, we added T2WI parameters to the "imaging protocol" section.

Q5) There are many charts and graphs which are not necessary and you don't need to bring the chi square analysis tables in your article, please sum your data just in one or two table and note that charts are not figures , you named them figures which must be changed.
R: Tables and figures in manuscript have been reorganized according to reviewer suggestion.

Q6) You didn't mention anything about appendicitis complication in your cases, please add them too.
R: Appendicitis complications were added to the results section.

Q7) You mentioned that in overweight patients , NECT may be false negative, what is your reason and reference? As in discussion you have written that there was no difference! And we know that having more fat will makes visualization of bowel loops easier!
R: It is excellent suggestion. The sentence stating that NECT may be false negative in overweight patients was removed from the abstract section.

Q8) In discussion you have written by mistake that appendicitis referred to diameter of appendix less than 6 mm, which must be corrected to more than 6 mm.
R: In our study, appendicitis was diagnosed with DWI-MRI, although appendix diameter was smaller than 6 mm in two cases. Although the diameter of the appendix is expected to be greater than 6 mm, it is a sentence we mentioned that DWI-MRI can diagnose appendicitis in smaller diameters. Not used incorrectly

Q9) There are writing and grammatical mistakes which needs English writing revision.
R: Rechecked for English grammar.

Reviewer 2:
According to methodology point of view, it must be said that the statistical analysis and results presentation of study is not appropriate. The following points must be considered and edited:
Q1. The purpose of this study was to compare three radiological methods. For this purpose, all 70 samples should be examined by all three methods, and the results should be compared with the gold standard. But the second paragraph of the results section does not mention this issue? In this case, the accuracy of methods can not be compared with each other.
R: All patients were examined by all three methods. The results section has been reorganized.

Q2. To compare the accuracy of the methods, it must be calculated and compared the sensitivity and specificity using by ROC curve analysis; but here, it was not used?
R: The results were re-evaluated by performing a ROC curve analysis.

Q3. For results presentation: It is better the demographic and clinical data of samples, to be presented in the first section, and so by table.
R: Demographic data are presented in the table according to reviewer suggestion.

OPEN PEER REVIEW

Revision (1)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (1) 18 Apr 2021

Dear AE,
Thanks from dear authors for applying comments in the manuscript. Currently, this submission is acceptable according to methodology point of view, and so it is ready for publication in the IJR.
Thanks.

REFEREE: Reviewer | **Revision** (1) 25 Apr 2021

Dear AE,
Thanks for applying recommended changes. in tables, the total number of patients is 70, but in appendix diameter, 69 appendix are measured. The authors should correct it.
Thanks.

REFEREE: Associate Editor | **Revision** (1) 10 May 2021

Dear EIC,
Thanks for considering our journal. Based on reviewers, the manuscript needs minor revision.
Thanks.

REFEREE: EIC | **Revision** (1) 11 May 2021

Dear authors,
Your article needs Minor Revision.
Regards

OPEN PEER REVIEW

Revision (2)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

RESPONSE FOR QUERIES

We thank the reviewers and editor for their thoughtful comments. Our point-by-point response follows, including additional explanations.

Reviewer(s)' Comments to Author:

Reviewers' Comments:

Reviewer 1:

Thanks from dear authors for applying comments in the manuscript. Currently, this submission is acceptable according to methodology point of view, and so it is ready for publication in the IJR.

We thank you for the valuable comments on this paper and appreciate your acceptance.

Reviewer 2:

Dear authors thanks for applying recommended changes. in tables , total number of patient is 70, but in appendix diameter, 69 appendix are measured. please correct it.

Although the number of cases was 70, the appendix was perforated in one case. Since the diameter measurement would be meaningless for the statisical analysis, this one case was excluded from the evaluation of the diameter measurement.

OPEN PEER REVIEW

Revision (2)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (2) — 22 May 2021

Dear AE,
The study is reviewed carefully. According to comments and revisions by the author, this manuscript is accepted.
Thanks

REFEREE: Associate Editor | **Revision** (2) — 3 Jun 2021

Dear EIC,
The requested changes were made, and the manuscript could be accepted.
Thanks.

REFEREE: Reviewer | **Revision** (2) — 7 Jun 2021

Dear AE,
The study is reviewed carefully. According to comments and revisions by the author, this manuscript is accepted.
Thanks

REFEREE: Associate Editor | **Revision** (2) — 10 Aug 2021

Dear EIC
The reviewer(s) have recommended publication, but also suggest some minor revisions to the manuscript. Therefore, I invite the author to respond to the reviewer(s)' comments and revise his manuscript.
Kind regards,

REFEREE: EIC | **Revision** (2) — 14 Aug 2021

Dear authors,
Your article needs Minor Revision.
Regards

OPEN PEER REVIEW

Revision (3)

Reply to Reviewers

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You can read the authors' responses to the reviewers' comments in the next page.

Associate Editor's Comments:

Associate Editor 1:

Dear author

The requested changes were made, and the manuscript could be accepted.

Associate Editor 2:

1-what do the authors mean by “biological data” [line 2]? do they mean laboratory data?

Response: We meant “laboratory data” therefore “biological data” is changed as “laboratory data” in the manuscript.

2-the authors mentioned “cross-sectional imaging” [line 2]. Is the imaging of appendicitis probable only by cross sectional imaging?

Response: Imaging of appendicitis is possible with other methods like sonography which is sometimes including among cross-sectional imaging. However mostly do not count among. Therefore “cros-sectional imaging “ changed as “diagnostic imaging ” instead.

3-in objective of abstract, this part is incomplete: “This study aims to employ diffusion-weighted magnetic resonance imaging (DW-MRI)” employ DW-MRI for what?

Response: Editor is right that the sentence is not clear. Therefore, we modified the sentences as: “In this study, the objective was to compare US, NECT, and DW-MRI to have an accurate diagnosis of acute appendicitis with the rates of appendicitis identified following surgery.”

4-in line 8, “involving” is not appropriate. Better word is: “including”

Response: As the suggestion of the Editor, the word “involving” is changed as “including” in the manuscript.

5-in line 25, “Appendicitis removal” should be “appendix removal”

Response: As the suggestion of the Editor, the word “Appendicitis removal” is changed as “appendix removal.

6-in line 30, the authors mentioned: “the primary clinical methods used are pelvic ultrasonography, …” these are Para clinical methods and in fact, imaging methods, not clinical methods.

Response: The editor is right; we removed the word from the manuscript and added “imaging methods” instead of “clinical methods”

7-please separate the objective part before method section of the paper according to journal format.

Response: As the suggestion of the Editor, objective part is separated before method section of the paper according to journal format. The section of the paper named according to the Journal format and all sections are separated from each other.

8-please add sequential numbers for paper parts: 1-background, 2-objectives, 3-patients and methods, 3.1- Patient preparation and surgery, ….

Response: Sequential numbers for paper parts are added

9-what is the abbreviation of TIRM?

Response: The explanation of the TIRM and STIR were added in the manuscript where they were first mentioned as “Short Tau Inversion Recovery (STIR)/ Turbo Inversion Recovery (TIRM)”

10-please add the manufacturer data of SPSS and R.

Response: The manufacturer data of SPSS and R added as below

- (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.).
- The statistical analyses for the present study were conducted using R (version 3.6.1 R Core Development Team, 2013

11-in line 148, please delete “respectively”

Response: in line 148, the word “respectively” is deleted.

12-in line 148, what is the meaning of “positive odds ratio”? do you mean “positive likelihood value” or “negative likelihood value”?

Response: We meant as “The positive likelihood value” therefore “positive odds ratio” is changed as “The positive likelihood value”

13-P value of 0.000 should be written as: <0.001.\

Response: p values written as 0.000 are changed as <0.001

14-for which variable, the authors have mentioned cutoff in table 5? Please mention in table or its footnote.in addition, please define abbreviations of this table in footnote

Response:

The words “Imaging Methods Variables” are added in the table legend to make it clear. Also, abbreviations of the table 5 were defined as “**AUC;** Area under the ROC Curve, **US;** Ultrasonography, **NECT;** Non-enhanced computed tomography, **DW-MRI**; diffusion-weighted magnetic resonance imaging, **Sens;** Sensitivity, **Spec;** Specificity, **PPV;** Positive Predictive Values, **NPV;** Negative Predictive Values.

”

OPEN PEER REVIEW

Revision (3)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Associate Editor | **Revision** (3) 25 Aug 2021

Dear EIC
Based on the authors' answers to the reviewers' comments, the reviewer(s) have recommended publication.
Kind regards.

REFEREE: EIC | **Revision** (3) 28 Aug 2021

Dear authors,
Your article is acceptable for the publication in IJR.
Regards