



**Baishideng
Publishing
Group**

7901 Stoneridge Drive, Suite 501,
Pleasanton, CA 94588, USA
Telephone: +1-925-223-8242
Fax: +1-925-223-8243
E-mail: bpgoffice@wjgnet.com
https:// www.wjgnet.com

PEER-REVIEW REPORT

Name of journal: World Journal of Radiology

Manuscript NO: 39688

Title: In vivo evaluation of early renal damage in type 2 diabetic patients on 3.0 T MR diffusion tensor imaging

Reviewer's code: 02885958

Reviewer's country: Japan

Science editor: Fang-Fang Ji

Date sent for review: 2018-05-18

Date reviewed: 2018-05-26

Review time: 8 Days

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language	(High priority)	<input checked="" type="checkbox"/> Anonymous
<input checked="" type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input checked="" type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input checked="" type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

In the clinical nephrology field, it is important to establish new clinical parameters to evaluate the severity of renal damage because limited parameters are only available at present. Imaging studies is generally non-invasive, and considered to be helpful. Until

now, clinical advantages of MRI, bold MRI and doppler ultrasonography have been reported, and they are applied to the clinical medicine although their usefulness are still limited. Therefore, measurement of FA value in DTI of MRI which is recently raised technique is important and interesting. However, there are some issues to evaluate the significance of this study. Major In the text, the authors describe that the reduction of FA value may show the relation to the glomerular sclerosis and interstitial fibrosis by citation of prior studies. Generally, those pathohistological appearance would be apparent in the advanced stage of diabetic nephropathy, which is corresponding to the patients showing apparent proteinuria (macroalbuminuria) or renal failure. It is understandable that the FA measurement might be possibly useful for the assessment of diabetic nephropathy patients in the earlier stages, however, it might be better that the patients with massive proteinuria would be included in this study to show the validation of this measurement. In diabetic nephropathy, it is generally accepted that the patients in earlier stages, non-albuminuria or microalbuminuria, show elevated GFR, hyperfiltration, because of pathological dilatation of glomerular afferent arteriole, ECF volume expansion due to sodium retention, and the constriction of efferent arteriole due to renin-angiotensin activation. As a result, GFR is never decreased less than 60 ml/min until the glomerular and interstitial degeneration being highly proceeded, indicating that GFR is less helpful to assess the severity of early diabetic nephropathy. This is the reason why multiple recent clinical guidelines of diabetic nephropathy do not pay much attention to GFR to determine the clinical stage of diabetic nephropathy. Therefore, at least in patients with microalbuminuria, assessment of GFR is less significant to evaluate the severity of renal damage, indicating that the evaluation of the correlation between GFR and FA value in this study is less significant in the clinical nephrology. Minor Comment #1 Newly appeared abbreviation, DTI, in the abstract should be described with non-abbreviated full term, diffusion tensor image. Additionally, full-term

corresponding to NAU is not described. Comment #2 In the section of “Renal DTI analysis among groups” in the Results part, the term “medullary” would be mismatched. Is it “cortical”? Comment #3 In figure 2 and 3, separated bars showing entire DM patients should be depicted. Otherwise, statistical values in those figures would be meaningless. Comment #4 In figure 4 and 5, the authors conclude the correlation between eGFR and FA value is “significant”. In the correlation analysis, calculated p value does not show the significance of the correlation, but correlation coefficient (R), especially coefficient of determination (R^2) is most important value for the evaluation of the correlation. In this case, R^2 values for the correlation of eGFR with cortical and medullary FA are 0.103 and 0.269, respectively. These values indicate that the number of cases showing this correlation would be just one and less than 3 of 10 DM patients. This calculation indicates that the patients showing this correlation would be very rare. Is it still significant?

INITIAL REVIEW OF THE MANUSCRIPT

Google Search:

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No

BPG Search:

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No



**Baishideng
Publishing
Group**

7901 Stoneridge Drive, Suite 501,
Pleasanton, CA 94588, USA
Telephone: +1-925-223-8242
Fax: +1-925-223-8243
E-mail: bpgoffice@wjgnet.com
https:// www.wjgnet.com

PEER-REVIEW REPORT

Name of journal: World Journal of Radiology

Manuscript NO: 39688

Title: In vivo evaluation of early renal damage in type 2 diabetic patients on 3.0 T MR diffusion tensor imaging

Reviewer's code: 00503334

Reviewer's country: United States

Science editor: Fang-Fang Ji

Date sent for review: 2018-05-04

Date reviewed: 2018-05-30

Review time: 26 Days

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language	(High priority)	<input checked="" type="checkbox"/> Anonymous
<input checked="" type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input checked="" type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input checked="" type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

Diabetic nephropathy (DN) is one of the most common diabetic complications, as well as the leading cause of end-stage renal disease around the world. Currently, urinary microalbumin and estimated glomerular filtration rate (eGFR) are the standard methods

for assessing early glomerular damage and renal function changes in clinical practice. However, both are non-reliable indicators, with significant limitations. Therefore, the work reported by Yin and his colleague has significant value in clinical practice. However, the manuscript should be intensively revised. 1) As the author mentioned in the section of 'Post processing and analysis of DTI images', apparent diffusion coefficient (ADC) is another important feature of DTI. The finding from several studies also reported that ADC values were significant lower in the DN patients than that of the healthy control (eg. Ref 4, Ref 5). While, no significance reported in other study (Ref 21). Would you be able to detect the ADC value in your study? Is there any difference detected? 2) The section of "Renal DTI analysis among groups" of the results section should be revised and clarified. 2.1 "Statistical significant difference was detected in medullary FA between the diabetic patients and healthy volunteers ($p = 0.004$)". The "medullary FA" should be "cortex FA" (?) 2.2 The author only compared the difference between 1) NAU and healthy control; 2) DN and healthy control. Is there any FA difference between MAU and NAU groups? 3. Separated bars showing entire DM patients (including both MAU and NAU) should be depicted. 4. In the section of Serum and urinary biomarkers, please state the methods used to measure the serum Cr and BUN 5. This article should be cited in your paper: Hueper K, Hartung D, Gutberlet M, Gueler F, Sann H, Husen B, Wacker F, Reiche D. Magnetic resonance diffusion tensor imaging for evaluation of histopathological changes in a rat model of diabetic nephropathy. Invest Radiol. 2012;47(7):430-7

INITIAL REVIEW OF THE MANUSCRIPT

Google Search:

☐ The same title

☐ Duplicate publication



**Baishideng
Publishing
Group**

7901 Stoneridge Drive, Suite 501,
Pleasanton, CA 94588, USA

Telephone: +1-925-223-8242

Fax: +1-925-223-8243

E-mail: bpgoffice@wjgnet.com

https:// www.wjgnet.com

[] Plagiarism

[Y] No

BPG Search:

[] The same title

[] Duplicate publication

[] Plagiarism

[Y] No



**Baishideng
Publishing
Group**

7901 Stoneridge Drive, Suite 501,
Pleasanton, CA 94588, USA
Telephone: +1-925-223-8242
Fax: +1-925-223-8243
E-mail: bpgoffice@wjgnet.com
https:// www.wjgnet.com

PEER-REVIEW REPORT

Name of journal: World Journal of Radiology

Manuscript NO: 39688

Title: In vivo evaluation of early renal damage in type 2 diabetic patients on 3.0 T MR diffusion tensor imaging

Reviewer's code: 02666537

Reviewer's country: Netherlands

Science editor: Fang-Fang Ji

Date sent for review: 2018-05-29

Date reviewed: 2018-05-30

Review time: 1 Day

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input checked="" type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language	(High priority)	<input checked="" type="checkbox"/> Anonymous
<input type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input checked="" type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input checked="" type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

Nice paper, but presentation should be improved. Specific comments: 1. Abstract. Define NAU. Replace unclear sentences 'Cortical....p=0.06).' by statement that results for MAU and NAU were similar. 2. MRI protocol. Specify the DWI fat saturation method. Without

fat saturation good kidney DWI is impossible. 3. Post processing. One observer. Was the reproducibility of ROI drawing and analysis looked at? Please provide some data! 4. Presentation of results is poor. It helps a lot to replace Figures 3 and 4 by a second table containing the exact numbers for FA as well as the ADC values for MUA, NUA and controls. 5. Figure 5 and 6 must be combined in one plot, using different symbols for cortical and modular FA. 6. The text of results can be shortened. 7. Introduction and results sections are well written..

INITIAL REVIEW OF THE MANUSCRIPT

Google Search:

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No

BPG Search:

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No

PEER-REVIEW REPORT

Name of journal: World Journal of Radiology

Manuscript NO: 39688

Title: In vivo evaluation of early renal damage in type 2 diabetic patients on 3.0 T MR diffusion tensor imaging

Reviewer's code: 03022180

Reviewer's country: Brazil

Science editor: Fang-Fang Ji

Date sent for review: 2018-05-18

Date reviewed: 2018-05-31

Review time: 13 Days

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language	(High priority)	<input checked="" type="checkbox"/> Anonymous
<input checked="" type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input checked="" type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input checked="" type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

This is a very interesting study that aimed to investigate the utility of renal diffusion tensor imaging (DTI) to detect early renal damage in patients with type 2 diabetes. In the beginning of the submission the authors state that it was a retrospective Cohort Study

but in the abstract the authors mention that the patients were prospectively included in the study. Please clarify. We concluded that DTI means diffusion tensor imaging by reading the title of the manuscript. It is not specified in the text. The authors mention only "DTI" without writing the meaning of this abbreviation. The sample size of the study is small, although there was a significant statistical difference concerning DTI vs in the group of diabetic patients. How long did the authors take to include these patients? In the abstract the authors refer all the time with the control group. I suggest they also include a comparison between patients with and without microalbuminuria. Otherwise they cannot conclude that DTI is a more sensitive biomarker than microalbuminuria. In the informed consent statement the authors say that patients were not required to give written informed consent to the study because the scan was noninvasive and radiation-free, and had no interference with treatment, and the analysis used anonymous clinical data, all of which had been explained to the included subjects. I believe that every study has to be submitted to the IRB and the IRB has to decide if a consent form is needed. Is there a letter from the local IRB regarding the waiving of the informed consent form? In the text the authors state that the informed consent form was obtained. It is not clear. I would like to know if there was any statistical difference between patients with normoalbuminuria and microalbuminuria.

INITIAL REVIEW OF THE MANUSCRIPT

Google Search:

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No



7901 Stoneridge Drive, Suite 501,
Pleasanton, CA 94588, USA
Telephone: +1-925-223-8242
Fax: +1-925-223-8243
E-mail: bpgoffice@wjgnet.com
https:// www.wjgnet.com

BPG Search:

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No