

PEER-REVIEW REPORT

Name of journal: *World Journal of Radiology*

Manuscript NO: 73680

Title: Evaluation of the dual vascular supply patterns in Ground-Glass nodules with a dynamic volume computed tomography

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05764104

Position: Editorial Board

Academic degree: Doctor, PhD

Professional title: Associate Professor, Senior Scientist

Reviewer's Country/Territory: Russia

Author's Country/Territory: China

Manuscript submission date: 2021-12-02

Reviewer chosen by: AI Technique

Reviewer accepted review: 2022-01-10 04:52

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Review time: 11 Days and 14 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input checked="" type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Peer-reviewer statements	Peer-Review: [<input checked="" type="checkbox"/>] Anonymous [<input type="checkbox"/>] Onymous Conflicts-of-Interest: [<input type="checkbox"/>] Yes [<input checked="" type="checkbox"/>] No
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SPECIFIC COMMENTS TO AUTHORS

The manuscript is devoted to the assessment of the dual vascular supply patterns of ground-glass nodules with regard to different histopathology and opacities from perfusion CT data. The authors performed a thorough analysis of data for a relatively large number of patients, specifically 47. Up to this day, not many papers have been published, where the dual vascular supply patterns of ground-glass nodules are evaluated with perfusion CT. That is why the paper might be of interest to the readers. The manuscript is a result of well-done methodical research. It is well organized and written in good English. I found only one fault in grammar (see Comment 3). In my view, the manuscript should be accepted for publication in the World Journal of Radiology. My comments are few and all (except Comment 3) are only recommendations.

Comments: 1. Throughout the text the authors use the phrases “pulmonary flow (PF)” and bronchial flow (BF),” every time repeating the abbreviations in the brackets. I think it is not necessary. It is quite enough to introduce the abbreviation once and then use it (for example, PF), or alternate the abbreviation and the phrase (for example pulmonary flow). 2. The Conclusion consists of a single sentence. This is not to the common rules. It is necessary to describe first all results the authors obtained, the formulate the final conclusions, and lastly outline the areas of further research. I would recommend the authors to keep to these rules in writing the Conclusion. 3. Fault in grammar: Page 13/20, last line: “forth” should be “fourth”.

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Academic degree: Doctor, MA, MD

Professional title: Deputy Director, Surgeon, Surgical Oncologist

Reviewer's Country/Territory: Germany

Author's Country/Territory: China

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Reviewer chosen by: Jia-Qi Zhu

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Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input checked="" type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
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Peer-reviewer statements	Peer-Review: [<input checked="" type="checkbox"/>] Anonymous [<input type="checkbox"/>] Onymous
	Conflicts-of-Interest: [<input type="checkbox"/>] Yes [<input checked="" type="checkbox"/>] No

SPECIFIC COMMENTS TO AUTHORS

The authors describe a novel ct-radiologic technique to examine pulmonary ground glass nodules (GGN) and to asses different ways of blood supply. For this, they examined prospectively 47 patients with GGN in CT and following histopathological diagnosis. The GGN-samples include bronchoalveolarcell carcinoma (BAC) or adenocarcinoma with predominant BAC, atypical hyperplasia, or organizing pneumonia. GGNs were also divided in those with part solid component and pure GGN. The authors mention the CONSORT statement. The aim of the study is well worth examining, the radiological techniques is sophisticated. But there is a problem with the methodology: GGN-Samples: The details of the patients GGN are not given. Included were GGN of >5mm but the range of GGN and the extent of part solid components is not mentioned, so variability is unclear. What level of solid component led to an exclusion from the study? Sample Size: The 47 GGNs are divided in different histological entities and then subdivided in pure GGN and part solid GGN, reducing the groups sample sizes significantly. One Way ANOVA is used, which is o.k. for smaller groups, but also Pearsons correlation test, with the intent to reveal perfusion-differences in the groups. The overall number of 47 patients and the subgroup sizes are rather small to assess distribution of attributes and allow for such an analysis. Interobserver variation: The study protocol included measures to assess interobserver differences of different radiologists and it gives the definitions used to separate pure GGN from part solid GGN. But there is no data about the extent of interobserver variation. Since the novel radiologic technique used is not widely implemented, the question of interobserver variability would merit a publication itself. The missing informations concerning this

aspect do not strengthen the conclusions. Consort Statement. The CONSORT statement is recommended for planning, performing and reporting randomised trials or interventional studies, which does not apply in this case. The STROBE-Protocol might have been more appropriate, but should have been applied before the study was conducted. In the CONSORT- statement provided all items are labeled as irrelevant. This could be a sign of a false study protocol, but more probable it is a sign of underappreciation of these study protocols, which in this case resulted in a flawed methodology. Radiological Technique: The technique is described but it is not mentioned, why the technical protocol was chosen. What were the reasons to do it this way (for example “established standard protocol” or “better definition of GGN” etc.)? What are limitations? If the “study question” was more precise, the methodological problems could easily be avoided. For a question like: “What is the dominant perfusion pattern in pulmonary GGN?” There would be no need to divide the sample of 47 in subgroups (especially as there seem to be no significant difference between GGN-carcinoma, GGN-hyperplasia and GGN-pneumonia, which could be a minor “sub-question”). Then all pure GGN could be examined against all part solid GGN, regardless of histological type (a division which would have to be clearly defined). The measurements and considerations would be the same, but a more precise question would end in a clearer study design and results of stronger significance. What is more, the Discussion describes why the answer to this question could be of direct clinical significance. This clinical relevance is a strong argument and should not pop up in the Discussion but should be pulled forward to the Introductions of the abstract and the text. To summarize, the article would benefit from some more work on the methodology. A major revision, formulating the “study question” more precisely and focused and putting emphasis on the clinical significance, would improve the article greatly.

RE-REVIEW REPORT OF REVISED MANUSCRIPT

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Academic degree: Doctor, MA, MD

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Reviewer's Country/Territory: Germany

Author's Country/Territory: China

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Review time: 1 Hour

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
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Peer-reviewer	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous



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statements

Conflicts-of-Interest: [☐] Yes [☒] No

SPECIFIC COMMENTS TO AUTHORS

The authors focus on the differences in perfusion patterns of a variety of pulmonary nodules. The aim of the publication is clearly stated and consequently referred to in the Discussion and the Conclusion. The methods-section is extensive, but it is not clearly defined which mixed GGN were included, i.e. if there was a cut off for the "solid" proportion. The findings are interesting, may be of future clinical value and have not been published before, as far as I know.

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Peer-reviewer	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous



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statements

Conflicts-of-Interest: [☐] Yes [☒] No

SPECIFIC COMMENTS TO AUTHORS

The authors have made significantly improvement in this revised version. They have addressed all my comments to a satisfactory degree. I don't have any other comments. In my opinion, the manuscript is ready for publication.