

PEER-REVIEW REPORT

Name of journal: *World Journal of Clinical Cases*

Manuscript NO: 81983

Title: Metformin effect on internal carotid artery blood flow assessed by area under the curve of carotid artery Doppler in women with polycystic ovarian syndrome

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05376168

Position: Peer Reviewer

Academic degree: PhD

Professional title: Professor

Reviewer's Country/Territory: China

Author's Country/Territory: Iraq

Manuscript submission date: 2022-11-30

Reviewer chosen by: AI Technique

Reviewer accepted review: 2022-12-14 08:09

Reviewer performed review: 2022-12-24 00:53

Review time: 9 Days and 16 Hours

Scientific quality	☐ Grade A: Excellent ☒ Grade B: Very good ☐ Grade C: Good ☐ Grade D: Fair ☐ Grade E: Do not publish
Language quality	☐ Grade A: Priority publishing ☒ Grade B: Minor language polishing ☐ Grade C: A great deal of language polishing ☐ Grade D: Rejection
Conclusion	☐ Accept (High priority) ☐ Accept (General priority) ☒ Minor revision ☐ Major revision ☐ Rejection
Re-review	☐ Yes ☒ No

Peer-reviewer statements	Peer-Review: [☒] Anonymous [☐] Onymous
	Conflicts-of-Interest: [☐] Yes [☒] No

SPECIFIC COMMENTS TO AUTHORS

This manuscript “Metformin effect on internal carotid artery blood flow assessed by area under the curve of carotid artery Doppler in women with polycystic ovarian syndrome” by Wisam Akram et al. describes the area under the curve of the internal carotid artery (AUC ICA) Doppler wave can be a useful marker for assessing IR among PCOS cases presented with menstrual irregularity; treated by metformin over six months. This well-written manuscript has a clear and distinct structure. I only have some minor comments. 1. In full text, fasting blood sugar is not medical terminology, please use glucose instead of sugar. 2. Please specify that, is there normal distribution in your all continuous data? If there is not normal distribution please express median plus interquartile range instead of mean $\pm$ standard deviation, and please use Kruskal-Wails test instead of One-way ANOVA test when assess the statistical data differences at 3 time points. 3. Table 1 and 2, please use the unified format for all parameters and please use the same number of digit for all P values.

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Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05751595

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: Iraq

Manuscript submission date: 2022-11-30

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-01-05 16:09

Reviewer performed review: 2023-01-14 04:40

Review time: 8 Days and 12 Hours

Scientific quality	☐ Grade A: Excellent ☐ Grade B: Very good ☒ Grade C: Good ☐ Grade D: Fair ☐ Grade E: Do not publish
Novelty of this manuscript	☐ Grade A: Excellent ☒ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No novelty
Creativity or innovation of this manuscript	☐ Grade A: Excellent ☒ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No creativity or innovation

Scientific significance of the conclusion in this manuscript	☐ Grade A: Excellent ☒ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No scientific significance
Language quality	☒ Grade A: Priority publishing ☐ Grade B: Minor language polishing ☐ Grade C: A great deal of language polishing ☐ Grade D: Rejection
Conclusion	☐ Accept (High priority) ☐ Accept (General priority) ☒ Minor revision ☐ Major revision ☐ Rejection
Re-review	☒ Yes ☐ No
Peer-reviewer statements	Peer-Review: ☒ Anonymous ☐ Onymous
	Conflicts-of-Interest: ☐ Yes ☒ No

SPECIFIC COMMENTS TO AUTHORS

1. The application of ultrasound measurement of parameters related to the internal carotid artery to assess the efficacy of metformin in patients with insulin resistance in polycystic ovary syndrome is novel approach. 2. From our experience, the measurement error of intima-media thickness is large, how do the authors measure and ensure objective and reliable results, and do they use relevant auxiliary software or special features of the instrument? It is suggested to add image descriptions. 3. The ultrasound images are suggested to select the images saved by the instrument or electronic images saved by the reporting system, which look neater and more beautiful than the scanned printed images. The baseline in Figure 3-c looks skewed.

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Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 03366151

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Italy

Author's Country/Territory: Iraq

Manuscript submission date: 2022-11-30

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-01-07 04:29

Reviewer performed review: 2023-01-17 13:07

Review time: 10 Days and 8 Hours

Scientific quality	☐ Grade A: Excellent ☐ Grade B: Very good ☒ Grade C: Good ☐ Grade D: Fair ☐ Grade E: Do not publish
Novelty of this manuscript	☐ Grade A: Excellent ☒ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No novelty
Creativity or innovation of this manuscript	☐ Grade A: Excellent ☒ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No creativity or innovation

Scientific significance of the conclusion in this manuscript	☐ Grade A: Excellent ☒ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No scientific significance
Language quality	☐ Grade A: Priority publishing ☒ Grade B: Minor language polishing ☐ Grade C: A great deal of language polishing ☐ Grade D: Rejection
Conclusion	☐ Accept (High priority) ☐ Accept (General priority) ☒ Minor revision ☐ Major revision ☐ Rejection
Re-review	☒ Yes ☐ No
Peer-reviewer statements	Peer-Review: ☒ Anonymous ☐ Onymous
	Conflicts-of-Interest: ☐ Yes ☒ No

SPECIFIC COMMENTS TO AUTHORS

Given that insulin resistance (IR) is implicated in many pathogenetic aspects of polycystic ovarian syndrome (PCOS), Akram et al. evaluated IR via Homeostatic Model Assessment for IR (HOMA-IR) and Doppler parameters; mainly carotid artery intima-media thickness (ICA-IMT) and the area under the curve of the internal carotid artery (AUC-ICA) Doppler wave among 54 PCOS patients. Additionally, they assessed the effects of treatment with metformin on IR over six months. Among biochemical, hormonal and Doppler parameters, AUC-ICA had the highest predictive value for HOMA-IR. Results clearly indicated that AUC-ICA can be a useful marker in assessing changes in IR among PCOS cases under treatment with metformin. The novelty of study relies on the use of AUC-ICA Doppler wave as noninvasive marker of IR in PCOS patients. The abstract is exhaustive and clearly explains study aims, methods and results. Study background is sound. Methods are adequate. Results are clearly exposed and properly interpreted. Tables and figures are appropriate. Study limitations have been acknowledged by authors. Thus, AUC-ICA can be considered as a reliable predictive marker for IR, follow-up, and prognostic value, especially during

metformin therapy. However, further studies are warranted for AUC-ICA application in clinical practice. I would suggest reporting intra- and inter- observer variability for AUC-ICA measurements. Please introduce metformin treatment (dosage and duration) in the methods. Please check abstract and text for typos (i.e. [abstract] metformin tab—500 gram should be 500 mg; similarly, in results section there is 500 gm instead of 500 mg)