

Authors' Reply

Navid Manafi¹, MD; Kaveh Abri Aghdam², MD, PhD

¹Department of Ophthalmology, David Geffen School of Medicine, University of California-Los Angeles, Los Angeles, CA, United States

²Eye Research Center, Eye Department, The Five Senses Health Institute, School of Medicine, Iran University of Medical Sciences, Tehran, Iran

ORCID:

Navid Manafi: <https://orcid.org/0000-0002-4610-402X>

Kaveh Abri Aghdam: <https://orcid.org/0000-0001-7568-6455>

J Ophthalmic Vis Res 2022; 17 (2): 309–310

Dear Editor,

We would like to thank Dr Siddharth Madan and colleagues for their interest in our work.^[1] We found that the majority of temporal artery biopsies (TABs) led to negative results and giant cell arteritis (GCA) could be diagnosed based on clinical grounds rather than relying just on TAB.

The American College of Rheumatology (ACR) formulated its classification criteria for diagnosing GCA in 1990.^[2] These criteria were used for the classification of and not for early diagnosis of GCA. The revised ACR criteria were proposed as a diagnostic tool for earlier diagnosis of GCA in 2016.^[3]

TAB has been considered the gold standard test for the diagnosis of GCA but it has suboptimal sensitivity and specificity. One of the main limitations of TAB is the presence of “skip lesions”, which increases the false-negative rate. Previous studies have revealed that an increase in TAB lengths or cut sections of the specimen does not yield a higher true positive rate.^[1, 3, 4]

Some imaging modalities have been suggested as surrogates for TAB.^[5–7] However, they are not currently included in the ACR or other guidelines for diagnosing GCA.^[2, 8] Currently, these modalities are compared with the TAB as a gold standard test, which is an imperfect standard itself. Color Doppler Ultrasound (CDUS)

and high-resolution magnetic resonance imaging (MRI) with MR angiography (MRA) have been studied regarding their role in diagnosing GCA.^[7, 9] The heterogeneous conclusions about the utility of CDUS likely reflect the operator-dependent nature of the procedure and may also result from the variability of the clinical context, probe settings, technique, and equipment. Standardization of these factors may lead to more widespread use of CDUS for the diagnosis of GCA. MRA revealed to have a pooled sensitivity and specificity of 93% and 81%, respectively, when TAB was used as the reference standard.^[10]

Fluorescein angiography (FA) is an invasive test that shows delayed choroidal filling and/or retinal artery in 56% of patients with arteritic anterior ischemic optic neuropathy (AAION) and even in some cases of GCA without visual symptoms but not in non-arteritic anterior ischemic optic neuropathy (NAION).^[11] Optical coherence tomography angiography (OCTA) non-invasively images capillary perfusion at various levels of the retina and optic disc. It could show dilation and eventual attenuation of the superficial peripapillary capillaries in eyes with AAION, corresponding with visual field loss and might be used as an adjunctive imaging modality.^[6, 12, 13] However, OCTA alone cannot differentiate NAION from AAION.

The increasing use of imaging modalities as diagnostic or adjunctive complements to

TAB is promising. The use of TAB cannot be overlooked as it shows the actual pathology of the specimen and other modalities have not shown superior diagnostic values compared with TAB. However, guidelines and criteria need to be updated and include modern imaging technologies. Imaging modalities can also aid in the evaluation of other extracranial and intracranial arteries that might be affected by either GCA or other vasculitides.

REFERENCES

1. Aghdam KA, Sanjari MS, Manafi N, Khorramdel S. Temporal artery biopsy for diagnosing giant cell arteritis: A ten-year review. *J Ophthalmic Vis Res* 2020;15:201–209.
2. Hunder GG, Bloch DA, Michel BA, Stevens MB, Arend WP, Calabrese LH, et al. The American College of Rheumatology 1990 criteria for the classification of giant cell arteritis. *Arthritis Rheum* 1990;33:1122–1128.
3. Mahr A, Saba M, Kambouchner M, Polivka M, Baudrimont M, Brocheriou I, et al. Temporal artery biopsy for diagnosing giant cell arteritis: The longer, the better? *Ann Rheum Dis* 2006;65:826–828.
4. Navahi RA, Chaibakhsh S, Alemzadeh SA. The adequate number of histopathology cross-sections of temporal artery biopsy in establishing the diagnosis of giant cell arteritis. *J Ophthalmic Vis Res* 2021;16:77–83.
5. Dinkin M, Johnson E. One giant step for giant cell arteritis: Updates in diagnosis and treatment. *Curr Treat Options Neurol* 2021;23:6.
6. Gaier ED, Gilbert AL, Cestari DM, Miller JB. Optical coherence tomographic angiography identifies peripapillary microvascular dilation and focal non-perfusion in giant cell arteritis. *Br J Ophthalmol* 2018;102:1141–1146.
7. Bley TA, Wieben O, Uhl M, Thiel J, Schmidt D, Langer M. High-resolution MRI in giant cell arteritis: Imaging of the wall of the superficial temporal artery. *Am J Roentgenol* 2005;184:283–287.
8. Mackie SL, Dejaco C, Appenzeller S, Duftner C, Gonzalez-chiappe S, Camellino D, et al. British Society for Rheumatology guideline on diagnosis and treatment of giant cell arteritis. *Rheumatology* 2020;59:e1–e23
9. Schmidt WA, Kraft HE, Vorpahl K, Völker L, Gromnica-Ihle EJ. Color duplex ultrasonography in the diagnosis of temporal arteritis. *N Engl J Med* 1997;337:1336–1342.
10. Klink T, Geiger J, Ness T, Heinzelmann S, Reinhard M, Hollulrich K, et al. Giant cell arteritis: Diagnostic accuracy of MR imaging of superficial cranial arteries in initial diagnosis – Results from a multicenter trial 1. *Radiology* 2014;273:844–852.
11. Siatkowski RM, Gass JDM, Glaser JS, Smith JL, Schatz NJ, Schiffman J. Fluorescein angiography in the diagnosis of giant cell arteritis. *Am J Ophthalmol* 1993;115:57–63.
12. Balducci N, Morara M, Veronese C, Barboni P, Casadei NL, Savini G, et al. Optical coherence tomography angiography in acute arteritic and non-arteritic anterior ischemic optic neuropathy. *Graefes Arch Clin Exp Ophthalmol* 2017;255:2255–2261.
13. Abri Aghdam K, Ashraf Khorasani M, Soltan Sanjari M, Habibi A, Shenazandi H, Kazemi P, et al. Optical coherence tomography angiography features of optic nerve head drusen and nonarteritic anterior ischemic optic neuropathy. *Can J Ophthalmol* 2018;54:495–500.

Correspondence to:

Kaveh Abri Aghdam, MD, PhD. Eye Research Center, Eye Department, The Five Senses Health Institute, School of Medicine, Iran University of Medical Sciences, Tehran 1445613131, Iran.
Email: kaveh.abri@gmail.com

Received: 09-06-2021 Accepted: 06-11-2021

Access this article online

Website: <https://knepublishing.com/index.php/JOVR>

DOI: 10.18502/jovr.v17i2.10825

This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

How to cite this article: Manafi N, Abri Aghdam K. Authors' Reply. *J Ophthalmic Vis Res* 2022;17:309–310.