

## Comparison between power doppler ultrasound and temporal artery biopsy in the diagnosis of giant cell arteritis. Open debate<sup>☆</sup>



### Comparativa entre ecografía Doppler frente a la biopsia de arteria temporal en el diagnóstico de la arteritis de células gigantes. Debate abierto

Dear Editor,

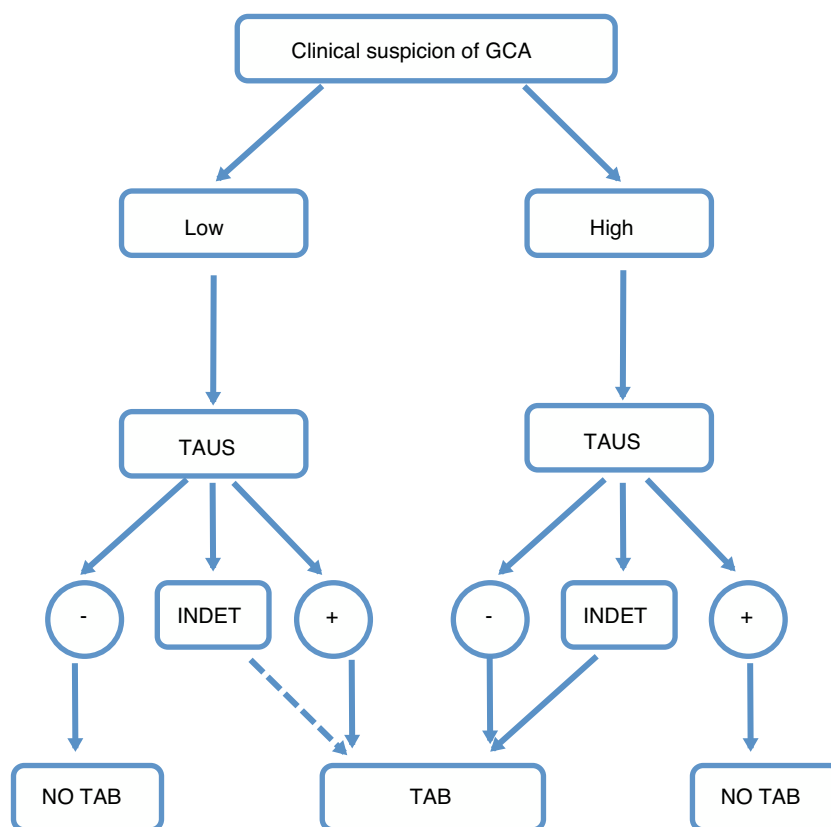
The description of the controversy regarding the use of Doppler ultrasound or biopsy published by González Porto et al. is of very high quality. The authors conclude that ultrasound scan is of restricted usefulness in giant cell arteritis (GCA) and recognise that there is a need for prospective studies.<sup>1</sup> We also consider the reply by de Miguel et al.<sup>2</sup> to be highly relevant, with its description of technical and methodological data, and we would like to add a few remarks with the aim of improving the procedure for ultrasound scan in GCA.

According to the recent EULAR 2018<sup>3</sup> recommendations, it is important to use a multifrequency transponder, and it is recommended that one of less than 15 MHz be used, as de Miguel et al. remark. In our experience we too use frequencies of 15 MHz for a

scale of greys and Doppler in colour (60% gain and PRF of 1,5–2 kHz), and all such tasks are performed by ultrasound technicians who have been trained in the said technique. One very important detail is that we must not restrict evaluation to the superficial temporal arteries. According to the data published by Schäffer et al.<sup>4</sup> we should measure and evaluate the inner and middle layers of the common superficial temporal artery (cut point: 0.42 mm), the parietal branch (0.29 mm), the frontal branch (0.34 mm), the facial artery (0.37 mm) and the axillary artery (1.0 mm), as all of these have a sensitivity of from 87% for the lowest up to 100%.

It is here where, as was said, the procedure has gradually been improved, and training in the said technique may improve the sensitivity parameters (S) and the specificity parameters (E). When they reviewed their data, de Miguel et al. found that they had improved over the years, until they obtained S of 91.6% and E of 95.83%.<sup>5</sup> In our case, in 2018 we obtained an S and E of 81.8 and 93.3%, respectively, with a positive predictive value of 90.1% and a negative predictive value of 87.5%, all without evaluating the axillary artery, although it is now regarded as essential to do this.<sup>6</sup>

Finally, respecting the open debate on the utility of ultrasound scan imaging in GCA, which was awarded a score of 5 points, and the recent EULAR<sup>3</sup> recommendations document, it is considered to be a test with very diagnostic value when performed by an expert. Like-



**Fig. 1.** Proposed algorithm for action in case of suspicion of giant cell arteritis (GCA).

High level of clinical suspicion: age >50 years old and 1) with exclusively cephalic symptoms (cephalea that commenced recently, jaw claudication or visual alterations); 2) with rheumatic polymyalgia, according to EULAR/ACR 2017 criteria; 3) with toxic syndrome or non-specific fever syndrome, once infectious causes have been ruled out and screening for neoplasia has proved negative, and 4) with ictus in vertebrobasilar territory, with no relevant cardiovascular history or findings with an atherogenic or embolic etiology after a directed study.

GCA: giant cell arteritis; TAB: temporal artery biopsy; TAUS: temporal artery ultrasound scan; INDET: indeterminate result.

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wise, it must be said that there are other complementary imaging techniques which should be evaluated to detect wall or luminal inflammation in extracranial arteries in the case of large vessel vasculitis such as GCA. It also has to be pointed out that ultrasound scan is of limited value in cases of aortitis.<sup>3</sup>

We understand that an algorithm should be used to decide whether a cohort has low or high clinical suspicion, deciding on the basis of the result whether or not to perform a superficial temporal artery biopsy. Nevertheless, this algorithm deserves its own particular debate (Fig. 1).

## References

- González Porto SA, Silva Díaz MT, Reguera Arias A, Pombo Otero J, González Rodríguez A, Valero Gasalla J. Estudio comparativo de la ecografía Doppler frente a la biopsia de arteria temporal en el diagnóstico de la arteritis de células gigantes. *Reumatol Clin.* 2018; <http://dx.doi.org/10.1016/j.reuma.2018.08.007>. S1699-258X(18)30187.
- de Miguel E., Monjo I. Respuesta a: Estudio comparativo de la ecografía Doppler frente a la biopsia de arteria temporal en el diagnóstico de la arteritis de células gigantes. *10.1016/j.reuma.2018.11.001*.
- Dejaco C, Ramiro S, Duftner C, Besson FJ, Bley TA, Blockmans D, et al. EULAR recommendations for the use of imaging in large vessel vasculitis in clinical practice. *Ann Rheum Dis.* 2018;77:636–43.
- Schäfer VS, Juche A, Ramiro S, Krause A, Schmidt WA. Ultrasound cut-off values for intima-media thickness of temporal, facial and axillary

arteries in giant cell arteritis. *Rheumatology (Oxford).* 2017;56:1479–83. <http://dx.doi.org/10.1093/rheumatology/keu143>.

- Aranda-Valera IC, García Carazo S, Monjo Henry I, de Miguel Mendieta E. Diagnostic validity of Doppler ultrasound in giant cell arteritis. *Clin Exp Rheumatol.* 2017;103 Suppl 35:S123–7.
- Estrada Alarcón P, Reina D, Navarro Ángeles V, Cerdà D, Roig-Vilaseca D, Corominas H. Doppler ultrasonography of superficial temporal artery in a cohort of patients with strong clinical suspicion of giant cell arteritis. *Med Clin (Barc).* 2018; <http://dx.doi.org/10.1016/j.medcli.2018.04.016>. S0025-7753(18)30286-0.

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## Application of the recommendations of the Spanish Society of Rheumatology on osteoporosis in a Fracture Liaison Service unit<sup>☆</sup>



### Aplicación de las recomendaciones de la Sociedad Española de Reumatología sobre osteoporosis en una unidad Fracture Liaison Service

Dear Editor:

The new recommendations for osteoporosis (OP) of the Spanish Society of Rheumatology (SER) propose criteria for initiation of OP treatment including patients with fragility fracture.<sup>1</sup> Thus, it is recommended that pharmacological treatment be started in patients >50 years with fragility fracture if they present: 1) Fractures of the hip or vertebra; 2) Other fragility fractures and low bone mineral density (BMD) defined by a T-score < -1 SD; 3) Patients with a high risk for hip fracture according to FRAX<sup>®</sup> with BMD ≥ 3%, and 4) Patients being treated with prednisone at a dose ≥ 5 mg/d. The SER recommendations were applied to a series of patients treated

in a Fracture Liaison Service (FLS) unit, comparing criteria according to age, sex, and type of fracture. In cases where bone densitometry (DXA) was not available, the fracture type and FRAX<sup>®</sup> for hip fracture without DXA were considered.

A total of 2162 patients with an average age of 73 years (SD: 10 years), 1778 women (82%), were analysed. DXA results are available for 1668 patients (77%). Applying the SER recommendations, 1920 patients of the total sample (89%) met the treatment criteria; 90% of the women and 83% of the men (Table 1). Of the hip and vertebrae fractures, 100% met criteria, and 83% of forearm fractures, 85% of humerus fractures and 73% of the group of other fractures. Of the 161 patients with peripheral fractures other than hip fractures where DXA is not available, 77 (48%) had FRAX<sup>®</sup> treatment criteria.

In the analysis of criteria application by decades of age, in the decade from 50 to 60, 67% of patients with forearm fractures, 79% with humerus fractures and 60% of other fractures met treatment criteria. On the other hand, in the decade from 60 to 70, 81% of patients with forearm fractures, 78% with humerus fractures and 73% with other fractures met treatment criteria.

**Table 1**

Total percentage of patients according to fracture type and treatment indication applying SER 2018 recommendations.

	Total number	DXA T-score < -1	Normal DXA, hip FRAX <sup>®</sup> ≥ 3%	Hip FRAX <sup>®</sup> ≥ 3% without DXA	Treatment indication SER 2018 recommendations
Hip	580 (26.8)	280/301 (93.0)	10/21 (47.6)	253/275 (92.0)	580 (100)
Vertebra	221 (10.2)	144/159 (90.5)	1/14 (7.1)	50/62 (80.6)	221 (100)
Forearm	662 (30.6)	505/585 (86.4)	6/80 (7.5)	43/85 (50.5)	554 (83.6)
Humerus	439 (20.3)	343/388 (88.4)	4/45 (8.8)	27/50 (54.0)	374 (85.1)
Other	260 (12.0)	182/235 (77.4)	2/52 (3.8)	7/26 (26.9)	191 (73.4)

BMD: Bone Mineral Density; FRAX<sup>®</sup>: Fracture Risk Assessment Tool; SER: Spanish Society of Rheumatology. The values represent No. (%).

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