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Name: Jean-Charles Mourot
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Primary author: Jean-Charles Mourot

Additional Authors: Mihaela Popescu : Rhumatologue, Hôpital Maisonneuve-Rosemont
Sai Yan Yuen : Rhumatologue, Hôpital Maisonneuve-Rosemont
Nicolas Richard : Rhumatologue, Hôpital Maisonneuve-Rosemont

Title: Diagnostic Performance of a Newly-Launched Canadian Fast-Track Ultrasound Clinic Performed by Rheumatologists for Diagnosis of Giant Cell Arteritis

Objective(s): Giant Cell Arteritis (GCA) diagnosis has always been a challenge for clinicians and there is no universal gold standard. Recent guidelines suggest that a suspected diagnosis should be confirmed with temporal artery (TA) biopsy or imaging, including ultrasound (US). In our Canadian setting, point-of-care TA US was near unavailable, and biopsy remains the standard of care. We hypothesize that launching a Fast-Track US Clinic by rheumatologists may spare the need for a biopsy. Therefore, we aimed to assess the diagnostic performance of TA US in this setting.

Method(s): In this monocentric retrospective cross-sectional analysis a total of 103 subjects were identified from the Fast-Track US Clinic between May 2020 and May 2022. Each subject had an US of the temporal and axillary arteries according to a standardized protocol for either suspicion of new-onset GCA or relapse. The pretest probability was calculated using the Southend GCA probability score (low, medium, or high). The sensitivity (Sn), specificity (Sp), positive predictive value (PPV) and negative predictive value (NPV) were calculated using the rheumatologist clinical diagnosis as the gold standard for GCA diagnosis.

Result(s): Study subjects were 77.7% female, had a mean age of 75.3 ± 9.3 years and a mean CRP of 48.6 ± 62.9 mg/L. The TA US for the diagnosis of GCA had a Sn of 80.0% [95% confidence interval (CI) 59.3; 93.2%], a Sp of 91.7% (95%CI 83.2; 97.0%), a PPV of 76.9% (95% CI 60.2; 88.0%) and NPV of 93.2% (95% CI 86.1; 96.7%). For comparison, TA biopsy in our study had a Sn of 73.7% (95%CI 48.8; 90.9%), a Sp of 80.8% (95%CI 60.7; 93.5%), a PPV of 73.7% (95%CI 54.9; 86.6%), a NPV of 80.8% (95%CI 65.9; 90.1%). 30, 44, 29 subjects were at high, medium, and low risk, respectively. Despite small numbers in each subgroups, subjects at high risk had a higher PPV with a lower NPV, while a similar Sn and Sp were observed between all three subgroups.

Conclusion(s): Our data confirms that TA US is a valid tool to contribute to the diagnosis of GCA. It also suggests the clinical pertinence for having a Fast-Track US clinic by rheumatologists in order to establish a quick and accurate diagnosis of GCA. Dissemination of knowledge across the country may eventually lead to a reduce need for TA biopsy.