

Are Temporal Artery Biopsies Necessary for the Management of Giant Cell Arteritis?

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Introduction

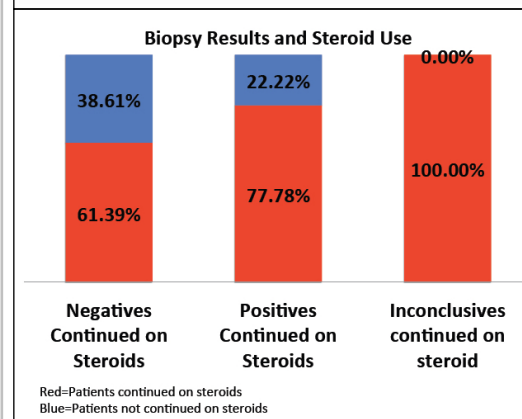
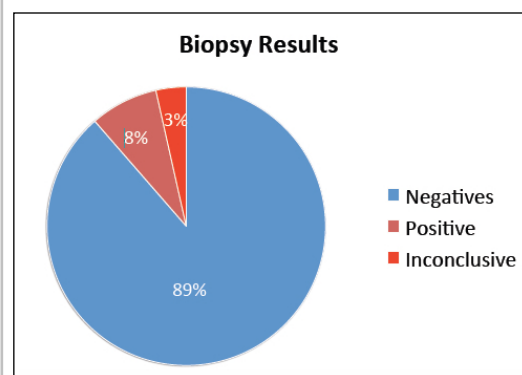
In 1990, the American College of Rheumatology introduced guidelines for the diagnosis of giant cell arteritis (GCA). According to their classification scheme, a positive diagnosis is made if three out of five possible criteria are present. These criteria include: age greater than 50, new headache, temporal artery abnormality, elevated ESR or abnormal temporal artery biopsy. Since that time, there have been conflicting reports in the literature regarding the need for confirmatory temporal artery biopsy. In this study, we retrospectively reviewed 114 cases of suspected giant cell arthritis, which were referred for temporal artery biopsy. ACR criteria were compared to the outcomes of the temporal artery biopsies.

Methods

A retrospective review of all patients (n=114) undergoing temporary biopsy for suspected GCA between 2006 and 2016 was completed. Data collected included biopsy results, ESR, CRP, age, and symptoms. Patients were separated into three groups based on biopsy results: positive, inconclusive, and negative. Biopsy outcomes were analyzed with regard to ACR criteria for GCA. Pretest and posttest probabilities were assessed. Of the patients there were 30 men and 84 women, and ages ranged from 49 to 87 years of age. 104 of the 114 biopsies were performed by the department of neurosurgery.

Results

Out of 114 patients, 3% were considered inconclusive, 89% had negative biopsies, and 8% were positive. The ACR criteria only had a sensitivity of 0.667, specificity of 0.396, and a positive predictive value of 0.122 in predicting the outcome of the temporal artery biopsy. The negative predictive value of the ACR criteria was 0.93. The negative predictive value of ESR alone was 0.983.



Conclusion

Based on biopsy results, the rheumatology guidelines have a poor sensitivity and specificity but a relatively high negative predictive value. ESR >50 alone has a negative predictive value of 0.983. Neither biopsy results or guidelines seem to predict the use of steroids in these patients. "Newer" noninvasive methods should be considered.

Rheumatology Guidelines

Sensitivity 0.667

Specificity 0.396

PPV 0.122

NPV 0.93

ESR >50

Sensitivity 0.889

Specificity 0.594

PPV 0.122

NPV 0.983

Learning Objectives

By the conclusion of this session, participants should be able to:

- diagnose giant cell arteritis based on diagnostic criteria
- Understand alternative diagnostic modalities for temporal arteritis.
- Compare the accuracy of temporal artery biopsy with the accuracy of clinical criteria

References

1. Davies C, Frost B, Eshan O, McLain AD, Shandall A. Temporal artery biopsy...who needs one? Postgrad Med J 82:476-478, 2006.
2. Hunder GG, Block DA, Michel BA, Stevens MB, Arend WP, Calabrese LH, Edworthy SM, Fauci AS, Leavitt RY, Lie JT, Lightfoot RW, Masi AT, McShane DJ, Mills JA, Wallace SL, Zvaifler NJ. The American College of Rheumatology 1990 criteria for the classification of giant cell arteritis. Arthritis and Rheumatism. 33:1122-1128, 1190.
3. Murchinson AP, Gilbert ME, Bilyk JR, Eagle RC, Prey V, Sergott RC, Savino PJ. Validity of the American College of Rheumatology criteria for the diagnosis of giant cell arteritis. American Journal of Ophthalmology 154:722-729, 2012.