Validation of the ACAS TIA/stroke algorithm.

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Abstract

BACKGROUND AND PURPOSE: An easily administered questionnaire and algorithm classifying transient ischemic attacks (TIAs) or strokes, and also their distribution, could be invaluable for identifying endpoints in epidemiologic studies or clinical trials of prevention and therapy of cerebral ischemia. The Asymptomatic Carotid Atherosclerosis Study (ACAS) devised a symptom-based questionnaire and algorithm for detecting events in the trial. The purpose of this study was to determine sensitivity, specificity, and agreement rates of the questionnaire and algorithm against diagnoses of a panel of cerebrovascular disease authorities.

METHODS: Three hundred eighty-one men and women at eight medical centers reported symptoms of stroke, TIA, or other neurologic illness. The questionnaire was administered by trained interviewers and the responses were analyzed using the algorithm. A standardized neurologic examination was performed by a neurologist. Data were submitted to two or more external reviewers. Sensitivity, specificity, and the kappa statistic (kappa) were used to evaluate the relationship between the algorithm and the external reviewers' diagnosis.

RESULTS: Of the 381 reviews, 196 were diagnosed as TIA or stroke by the external panel. The algorithm's agreement with the diagnosis of TIA or stroke was 80.1%, and kappa was 0.60. Sensitivity was 87.8%, and specificity was 71.9%.

CONCLUSION: While statistical agreement rates depend on the method of sample selection, the algorithm has a high agreement with an external
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Panel of experts and is a sensitive tool for event detection. The lower specificity indicates that careful neurologic evaluation may be required to confirm or refute events identified by the screening algorithm.

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