STROKE

Imaging improves the predictive utility of ABCD²

Transient ischemic attack (TIA) is associated with a high risk of subsequent stroke, but identifying which patients are most at risk is a difficult task for clinicians. New research shows that adding brain and carotid imaging data to the ACBD² score can improve the diagnostic utility of this risk stratification score.

Patients who present with TIA are often assessed with the ABCD² score—which measures variables including age, blood pressure, diabetes mellitus, symptoms, and event duration—at initial consultation, and this measure can help clinicians to stratify the risk of stroke in these patients.

"The ABCD² score is useful for risk stratification in primary healthcare settings, but there is a need for accurate risk prediction techniques in secondary care," explains lead investigator Peter Kelly. ABCD² does not include information from investigations such as carotid and brain imaging, although recent data indicate that such measures might have predictive utility. Kelly, Áine Merwick and their colleagues

aimed to incorporate such data into the risk score to improve stroke prediction.

> **❝ ...the addition of clinical and imaging data to the ABCD² score can improve stroke prediction ❞**

Kelly's group in Dublin collaborated with teams around Europe and North America to collate data from 2,654 patients with TIA. For each patient, ABCD² scores were calculated and several other clinical and imaging variables were measured. The researchers found that clinical data indicating other recent TIA, and MRI data indicating carotid stenosis or diffusion-weighted imaging positivity, provided independent predictive information for early stroke occurrence after TIA.

Kelly and colleagues weighted these factors and added them to the ABCD² score to create a new risk prediction score—ABCD³-I—for use

in secondary care. This score predicted the risk of stroke significantly more accurately than the ABCD² score in the initial patient sample. The team then tested the predictive ability of the new score in an independent validation sample of 1,232 patients and found consistent results, indicating that the score is externally valid.

According to these results, the addition of clinical and imaging data to the ABCD² score can improve stroke prediction after TIA. After further validation, ABCD³-I should provide a valuable tool with which clinicians can assess stroke risk. According to Kelly, "the score may [also] be useful for stratification of patients into clinical trials of stroke prevention treatments after TIA."

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