HRB Centre for Primary Care Research
Research Briefs

Clinical Prediction Rules

The value of clinical prediction rules in cerebrovascular disease

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Clinical prediction rules (CPRs) are increasingly used in general practice. These are clinical tools that take account of a patient's history and clinical examination to stratify patients according to their probability of having a specific target disorder. Outcomes of CPRs can be presented as diagnosis, prognosis, referral or treatment. Although not designed to replace clinical knowledge and experience, the prediction rules can be used to assist the overall diagnostic and prognostic process. The researchers at the Health Research Board (HRB) Centre for Primary Care Research (www.hrbcentreprimarycare.ie) have conducted a number of systematic reviews to examine the value of CPRs across different clinical domains. Two recent publications have explored the use of CPRs in different populations at risk of stroke.

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In a study co-funded by the Irish Heart Foundation, Dr Rose Galvin led a systematic review of the ABCD^2 rule. The rule is designed to evaluate the short term risk of stroke in people who have experienced a transient ischaemic attack (TIA). It is based on six clinical variables including age, hypertension, clinical features (weakness or speech impairment), duration of these symptoms and presence of diabetes. Based on the total number of symptoms present, a patient is stratified into low, moderate or high risk of subsequent stroke risk. Results from 16 validation studies confirmed the prognostic value of the ABCD^2 at predicting 7 and 90 day stroke risk. These findings were recently published in *Family Practice* [1]. Prof Claiborne Johnson, who led the development of the rule, congratulated the team on an 'excellent review of the ABCD^2'.

In an article published in *Thrombosis and Haemostasis* [2], Dr Claire Keogh led a systematic review on the evidence for the CHADS$_2$ rule, used to predict annual risk of stroke in patients with atrial fibrillation. The rule consists of six clinical features and assigns one point for each of congestive heart failure, hypertension, age≥75 years and diabetes mellitus, and two points for prior history of stroke or TIA. Patients are classified according to low, moderate or high risk of stroke, which can be used to inform appropriate treatment. The results highlight the methodological differences between many of the validation studies. Dr Keogh suggests that, 'Further validation of the CHADS$_2$ rule is necessary before widespread application in general practice'.

These reviews highlight the importance of examining the totality of evidence prior to the use of CPRs in clinical practice.

These reviews will contribute to the ongoing work at the HRB Centre for Primary Care Research in the development of an international register of clinical prediction rules relevant to primary care. This web-based register will be made publicly available in 2012 through the Cochrane Primary Health Care Field (www.cochraneprimarycare.org).

Professor Tom Fahey, Principal Investigator of the HRB Centre said, 'This register will assist with the knowledge transfer of evidence based medicine in clinical practice, at the point of patient care'.

The articles can be viewed at:

[1] Galvin R, Geraghty C, Motterlini N, Dimitrov BD, Fahey T. Prognostic value of the ABCD^2 clinical prediction rule: a systematic review and meta-analysis. *Family Practice* 2011; 28(4): 366-376. (www.ncbi.nlm.nih.gov/pubmed/21486940)

[2] Keogh C, Wallace E, Dillon C, Dimitrov BD, Fahey T. Validation of the CHADS$_2$ clinical prediction rule to predict ischaemic stroke. A systematic review and meta-analysis. *Thrombosis and Haemostasis* 2011; 106(3): 528-538. (www.ncbi.nlm.nih.gov/pubmed/21800003)