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COMMENT

Cochrane corner: non-contact tests for identifying people at risk of primary angle closure glaucoma

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The Cochrane review published by Jindal et al. in May 2020 evaluated the diagnostic accuracy of several non-contact tests for identifying people with narrow angles [1]. The authors included simple tests such as van Herick or limbal anterior chamber depth (LACD) and the oblique flashlight test, and also sophisticated imaging technologies such as scanning peripheral anterior chamber depth analyser, Scheimpflug photography; anterior segment optical coherence tomography (AS-OCT). The test results were compared with gonioscopy by an expert clinician as reference standard.

The authors found 47 studies involving over 20,000 patients. Overall van Herick performed as well as sophisticated imaging technologies. Using LACD ≤ 25% sensitivity was 0.83 (95% confidence interval (CI) 0.74–0.90), and specificity 0.88 (95% CI 0.84–0.92). However, there were methodological flaws across studies that may have led to an overestimation of the diagnostic accuracy of the tests.

Regarding AS-OCT, despite including data from 27 studies the authors were only able to generate a pooled estimate for subjective judgement of occludability. A large number of angle parameters were investigated but the cut points were determined from the best performing thresholds post-hoc. Difficulty in identifying the scleral spur led to large amounts of unusable data.

A recently published review in Progress in Retinal and Eye Research came to similar conclusions:"AS-OCT can provide diagnostic, mechanistic and prognostic aid in angle closure eyes. However, lack of easier interpretation, cost and agreement issues with gonioscopy preclude its widespread use by clinicians" [2].

The authors of the Cochrane review highlighted the need for high-quality studies to evaluate the performance of non-invasive tests for angle assessment in both community-based and secondary care settings.

Hospital eye services can barely cope with current demand for eye care. Among all people referred to hospital eye services with possible glaucoma a substantial proportion are discharged after the first visit and several triage pathways have been proposed [3, 4]. Unnecessary referrals are decreasing in units that have refinement referrals systems in the community, but their implementation across the UK is still patchy [4].

NICE glaucoma guidelines (correctly) recommended gonioscopic assessment of all people referred with possible glaucoma [5], and this recommendation adds to the demand to clinicians' time. If we had evidence that an alternative test to gonioscopy, e.g., van Herick, was highly accurate we could potentially design an efficient patient pathway using information from such a test.

This Cochrane review also highlighted the suboptimal quality of studies evaluating diagnostic technologies for diagnosing angle closure. This is not a new finding [6]. The following questions come to mind: first, do we, clinicians, understand why a case-control study design (with patients known to have the disease and controls) is inadequate to evaluate the accuracy of a new diagnostic test? If not, then we have to think that perhaps we are failing to teach and learn essential critical appraisal skills. And second, how is it possible that after doing so many studies involving tens of thousands of patients we still do not have an answer to an important question? I suggest we, researchers, need to do a better job.

Compliance with ethical standards

Conflict of interest The author declares that he has no conflict of interest.

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