

Aetiologic workup in cases of cryptogenic stroke: a systematic review and comparison of international clinical practice guidelines

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“Doctor, will it happen again?”

“Patient, I cannot say for sure.”

Introduction

Identifying the aetiology of ischaemic stroke is essential in order to initiate appropriate and timely secondary prevention measures to reduce the risk of recurrence (Hart et al, 2014). In 30% of ischaemic strokes, existing investigative protocols fail to establish the exact aetiology (Yaghi et al, 2017; Li et al, 2015). Such strokes are classed as ‘cryptogenic’ or as a stroke of unknown origin. However, there is a lack of international consensus on the optimum timing and type of investigations to identify stroke aetiology.

Aim: To systematically evaluate and compare international recommendations in clinical practice guidelines that relate to the assessment and investigation of the aetiology of ischaemic stroke, and any subsequent evaluation of cryptogenic stroke.

Method

Searches for clinical practice guidelines published from 2009-2019 were conducted using electronic databases (MEDLINE, HMC, EMBASE, and CINAHL), relevant websites of national and international professional organisations, and reference lists of included guidelines. Two reviewers independently screened titles, abstracts and full guidelines using a pre-defined relevance criteria form. From each included guideline, definitions of cryptogenic stroke, and recommendations related to assessment and investigation of the aetiology of stroke was extracted. Quality of the included guidelines was assessed using the AGREE II tool.

Data synthesis

All formal recommendations describing aetiologic workup in acute ischemic stroke were collated for further assessment. The included recommendations were then organised into categories reflective of a recently published algorithm for aetiologic workup in cryptogenic stroke (Saver, 2016).

Results

Of 8442 citations identified, 23 guidelines were included in the review (see Figure 1). The recommendations identified were organised into six categories of investigations (see Figure 2). Overall, the guidelines recommended that all patients with suspected stroke should routinely undergo brain imaging, vascular imaging, a 12-lead ECG, and routine blood tests/laboratory investigations. Only three guidelines provided recommendations of further investigations for rare causes of stroke.

Figure 1: PRISMA flow diagram

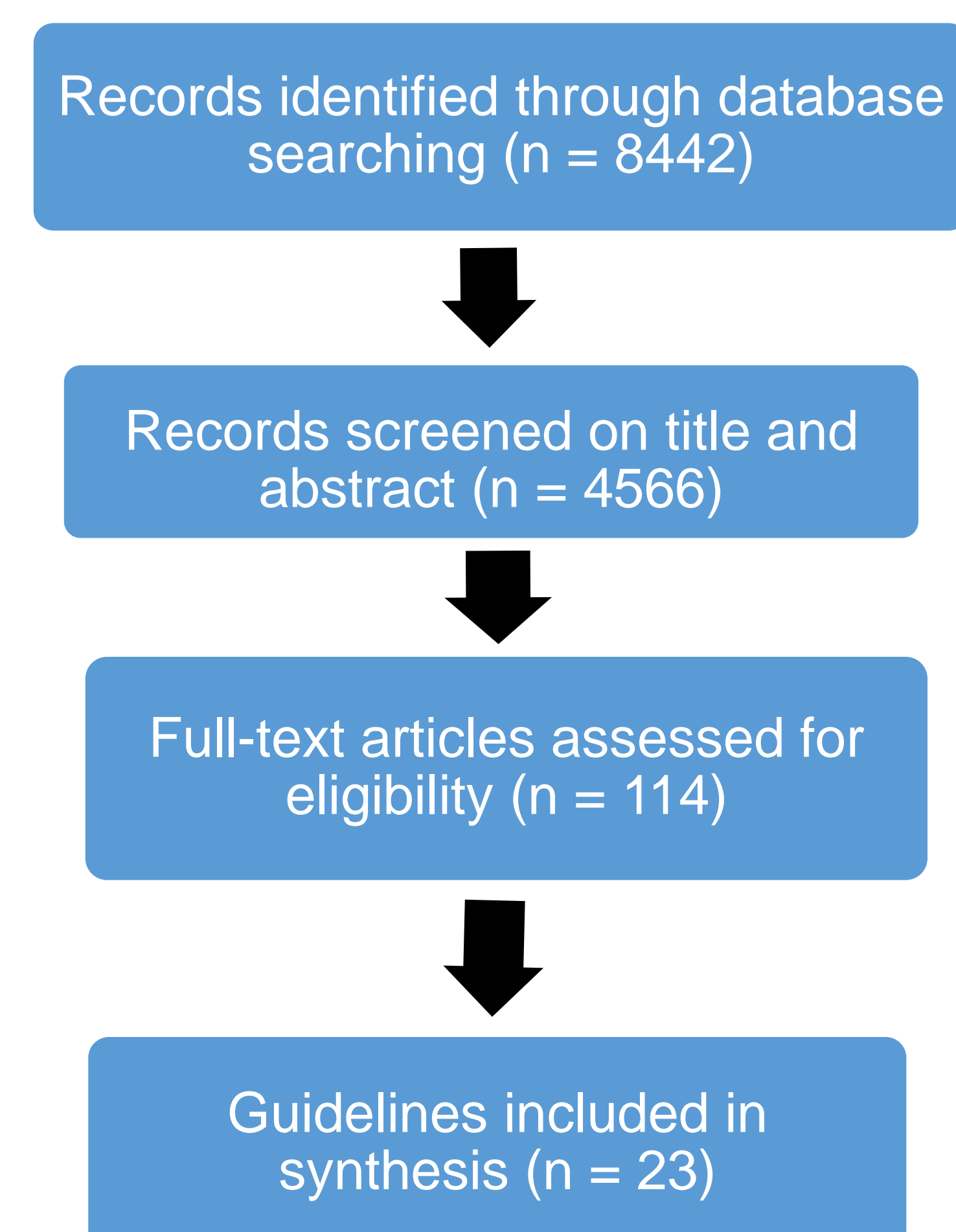
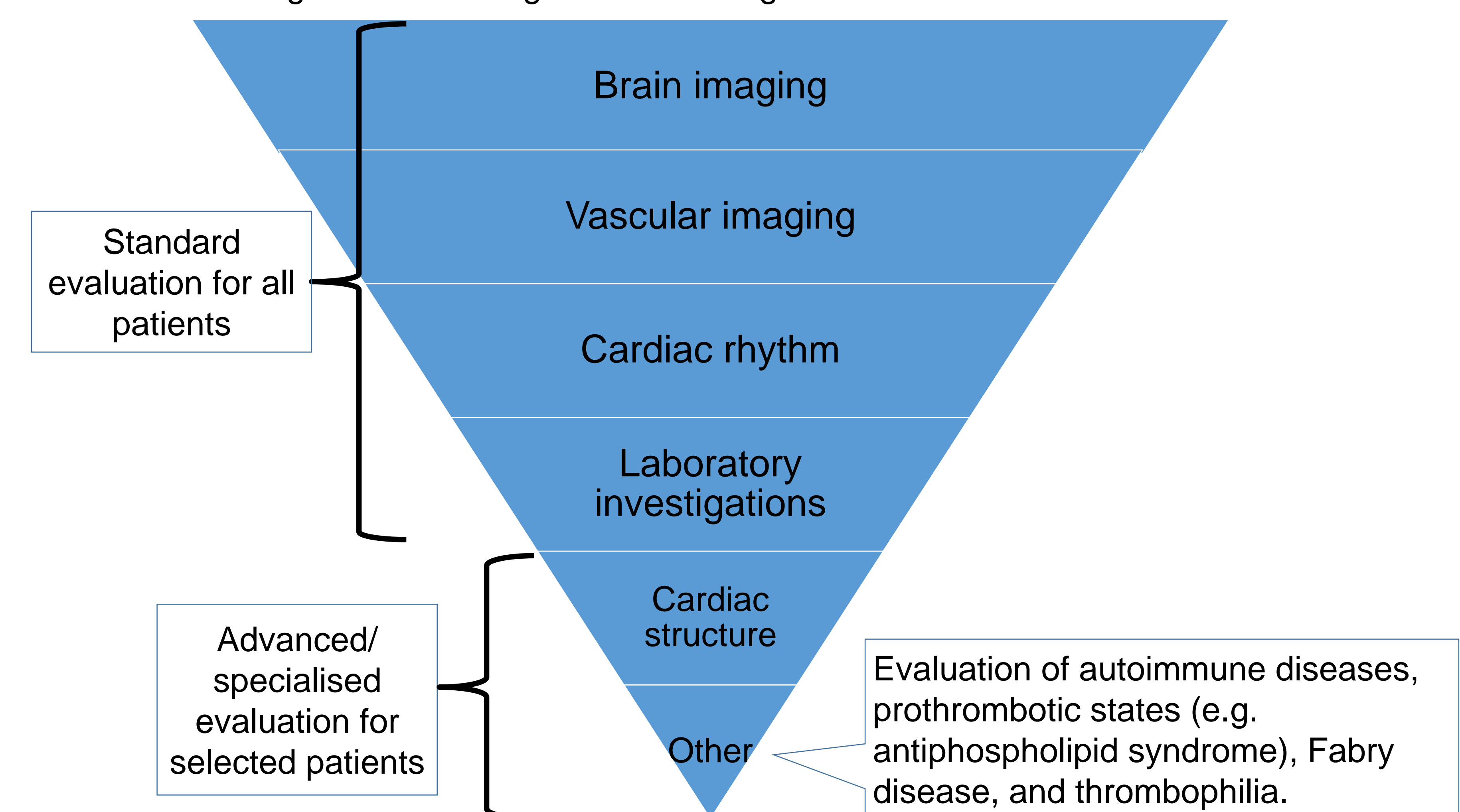


Figure 2: Six categories of investigations identified



Discussion

All included publications were in agreement about investigations which should be routinely performed for all acute stroke patients (‘standard evaluation’), but there was a lack of consistency and detail about additional investigations for patients in whom a cause is not identified through standard evaluation. This review has highlighted the need for well-designed primary research to identify an optimal pathway to expedite the identification of rare and very rare stroke aetiologies in a timely and cost-effective manner.

References

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