Software with artificial intelligence-derived algorithms for analysing CT brain scans in people with a suspected acute stroke: a systematic review and cost-effectiveness analysis

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Plain language summary

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Stroke is a serious life-threatening medical condition caused by a blood clot or haemorrhage in the brain. Quick and effective management, including a brain scan, of the patients with suspected stroke can make a big difference in their outcome.

Artificial intelligence-derived computer programmes exist that are intended to help with the interpretation of computed tomography scans of the brain in stroke. We undertook a thorough review of the existing research into the effectiveness and value for money of using these programmes to help doctors and other specialists to interpret computed tomography brain scans.

We found very little evidence to tell us how well artificial intelligence-derived computer programmes work in practice. Some studies have looked at artificial intelligence-derived computer programmes on their own (i.e. not taken together with a doctor's judgement, as they were designed to be used). Other studies have looked at what happens to patients who are treated for stroke when artificial intelligence-derived computer programmes are used; these studies provide no information about whether using artificial intelligence-derived computer programmes may have led to patients who could have benefitted from treatment being missed.

It is unclear how well artificial intelligence-derived software-assisted review works when added to current clinical practice.

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