

Interventions for improving modifiable risk factor control in the secondary prevention of stroke

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Background

People with stroke or transient ischaemic attack are at increased risk of future stroke and other cardiovascular events. Stroke services need to be configured to maximise the adoption of evidence-based strategies for secondary stroke prevention.

This review assessed the effects of stroke service interventions for implementing secondary stroke prevention strategies on modifiable risk factor control. These included systolic and diastolic blood pressure, body mass index, HbA1c, lipid profile, medication adherence, and cardiovascular events.

Method

We searched for randomised controlled trials (RCTs) that evaluated the effects of organisational and/or educational/behavioural interventions for patients or practitioners on modifiable risk factor control for secondary stroke prevention, compared with usual care. Databases searched included Cochrane Stroke Group Trials Register, CENTRAL, MEDLINE, Embase, article references and 10 additional databases/clinical trials registers.

Results

A total of 42 RCTs involving 33,840 participants were included. Organisational interventions (including education) were evaluated in 26 studies. The most common interventions were the introduction of integrated care services and collaboration between multi-disciplinary teams. Educational/behavioural interventions were evaluated in 16 studies, largely focused on

patients rather than service providers. GRADE approach assessed three studies as high risk of bias and the remainder as low. Although clinical and methodological heterogeneity was present, results were pooled where appropriate.

Discussion

Educational/behavioural interventions showed no clear differences on any of the review outcomes.

Organisational interventions resulted in improvements to achieve target blood pressure (odds ratio (OR) 1.44, 95% confidence interval (CI) 1.09 to 1.90; 13 studies; 23,631 participants), see Figure 1. There were no significant changes in mean systolic blood pressure (mean difference (MD), -1.58 mmHg 95% CI -4.66 to 1.51; 16 studies; 17,490 participants) and mean diastolic blood pressure (MD -0.91 mmHg 95% CI -2.75 to 0.93; 14 studies; 17,178 participants). There were no significant changes in the remaining review outcomes.

Implications for clinical practice

Organisational interventions can lead to improvement in achieving blood pressure targets, but have not been shown to improve other outcomes.

Patient education in the absence of organisational change is unlikely to lead to improvements in modifiable risk factor control.

Future research

Future research should focus on the development/evaluation of more effective interventions to translate secondary prevention recommendations into practice. Interventions included in this review differed considerably regarding aims, components and mode of delivery. Pre-

determined strategies for categorising interventions and their intensity may facilitate the synthesis of future research findings. There is also a need to evaluate the effects of specific components of organisational interventions, including the characteristics of an effective multidisciplinary team. We identified 24 ongoing studies and 11 studies that are awaiting assessment, demonstrating ongoing interest in this area.

Figure 1 - Organisational interventions versus usual care illustrating blood pressure target achievement

Disclosures

Dr Bridgwood was awarded a NIHR fellowship.

Dr Mistri has received speaker fees/consultancy/travel-grants for conferences from various companies manufacturing drugs for vascular disease and a grant from Novo Nordisk.

Professor Khunti acted as a consultant/speaker for Novartis/Novo Nordisk/Sanofi-Aventis/Lilly/Merck Sharp & Dohme. He has received grants from the same also Pfizer and BoehringerIngelheim. He acknowledges NIHR support.

Dr Lager,Professor Wilson,Dr Modi: none

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