

Pharmacist-led education and an antihypertensive treatment algorithm for blood pressure management in acute stroke

Tenay Rankin¹, Dr Johnson George², Dr Ben Clissold³, Heather Smith³, Dr Diana Bortoletto¹

¹Pharmacy Department University Hospital Geelong, Barwon Health, ²Monash University, ³Acute Neurosciences Unit Barwon Health

Introduction

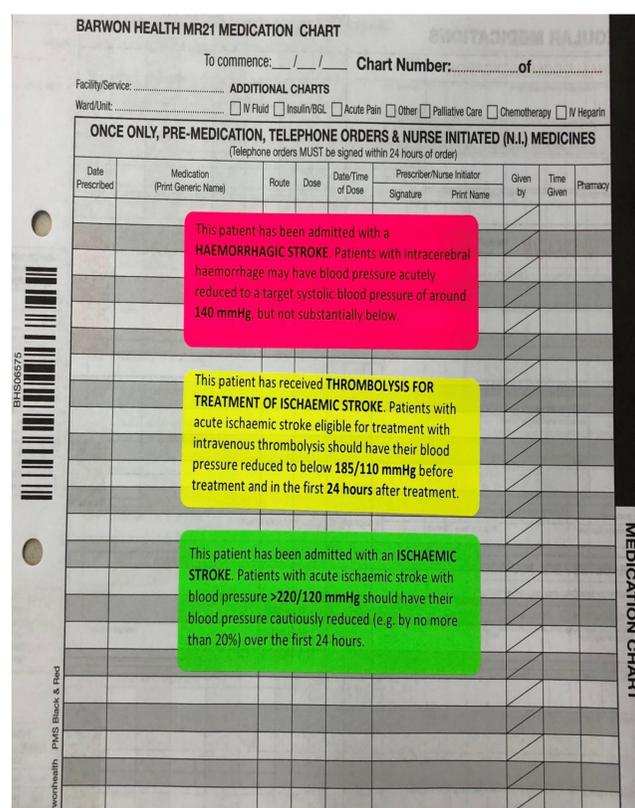
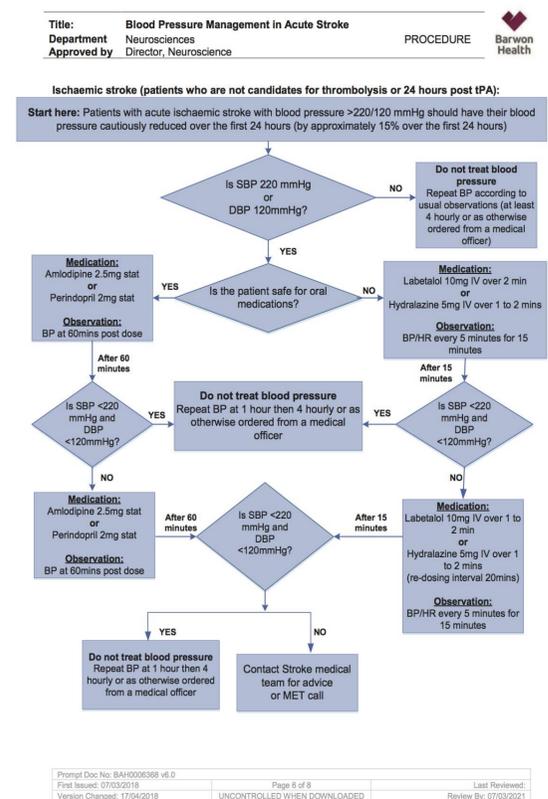
Following a stroke an acute hypertensive response may occur with potential deleterious effects. It is therefore critical to adhere to the Australian Clinical Guidelines for Stroke Management (ACGSM) on blood pressure (BP) targets. Despite this, previous studies have shown poor compliance with BP recommendations.

Aim

To improve appropriate BP management post-stroke in the first 48 hours of hospital stay according to recommendations in the ACGSM and reduce time to antihypertensive administration and effective BP control.

Method

This pre- and post-intervention study was conducted in patients admitted to the acute stroke unit from September 2017 to September 2018. An intervention package involving nursing education, BP target stickers and a treatment algorithm for antihypertensives was developed. Appropriate BP management was determined as having all BP readings outside the ACGSM recommendations appropriately managed.

Results

Ninety-nine patients were included in similarly matched pre and post groups. There was no significant improvement in the number of patients with appropriate BP management (pre 67.7% vs post 68.7%; p=0.879). The appropriate management of BP readings significantly improved post-intervention for haemorrhagic stroke (63/106 vs. 274/367; p=0.02) and in thrombolysis (309/328 vs. 236/240; p=0.014).

OUTCOMES	PRE-INTERVENTION	POST-INTERVENTION	p-value
Time to administration of antihypertensive, minutes, median (IQR)	20 (10-35)	8 (2-21.25)	0.008
Time to effective BP control, haemorrhagic stroke, minutes, median (IQR)	461 (173.8-966.5) N=4	188 (68-333.5) N=13	0.113

OUTCOMES	PRE-INTERVENTION N= 99	POST-INTERVENTION N= 99	p-value
Overall appropriate management of BP in the first 48 hours, n (%)	67 (67.7)	68 (68.7)	0.879
Appropriately managed BP readings Haemorrhagic stroke, n/N ^o of total BP readings (%)	63/106 (59.4)	274/367 (74.7)	0.002
Appropriately managed BP readings Ischaemic stroke treated with thrombolysis, n/N ^o of total BP readings (%)	309/328 (94.2)	236/240 (98.3)	0.014

Median time to antihypertensive administration significantly decreased (20 minutes [IQR (10,35)] vs 8 minutes [IQR (2,21)]; p=0.008). In haemorrhagic stroke, median time to effective BP control from admission reduced (461 minutes [IQR (173.75,966.5)] vs 188 minutes [IQR (68,333.5)]; p=0.113).

Conclusion

Whilst overall there was no significant improvement, this intervention was effective at improving management of BP in stroke subgroups and in other clinically meaningful parameters such as time to antihypertensive treatment and time to effective BP control.

References

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