Peninsula Health

An Evaluation of the Management of Severe Asymptomatic Hypertension: A Study From One Metropolitan and One Regional Hospital Focusing on the Use Of Glyceryl Trinitrate Patches

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BACKGROUND

- Severe asymptomatic hypertension (SAH) is commonly seen in hospitalised patients with antihypertensives being frequently used to manage this condition at Peninsula Health, especially Glyceryl Trinitrate (GTN) patches.
- However, this is controversial as rapid and aggressive lowering in blood pressure may result in serious adverse events. The optimal management of SAH is unclear as there is no consensus guidelines available.

AIMS

- The primary aim of the study was to examine the perceptions and approaches of medical officers to the management of SAH in hospitalised patients.
- The secondary aim was to gather information on the effects of GTN patches with or without other antihypertensive medications on patients' blood pressure, and to identify any associated adverse events when managing SAH.

METHODS

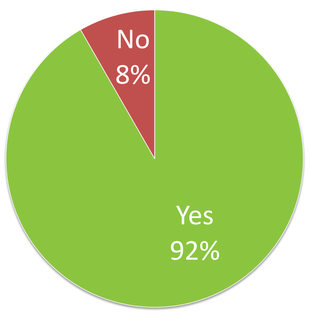
- A survey comprising seven questions was sent to medical officers covering medical and surgical units to evaluate their perceptions and approaches on the management of SAH.
- An audit was conducted on patients who were prescribed GTN patches for the management of SAH at Peninsula Health between May to July 2017.
- Data including antihypertensives medications used and BP changes after interventions were analysed using SPSS 19.

RESULTS

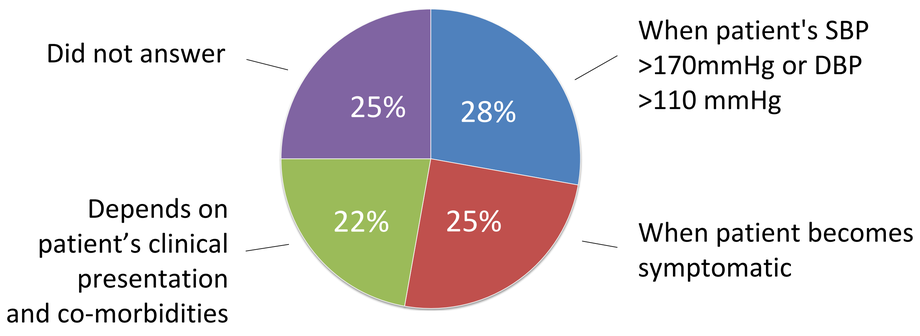
Survey Results

Surveys were completed by 36 out of 112 medical staff

Q1. Have you encountered any situation when SAH management was required?

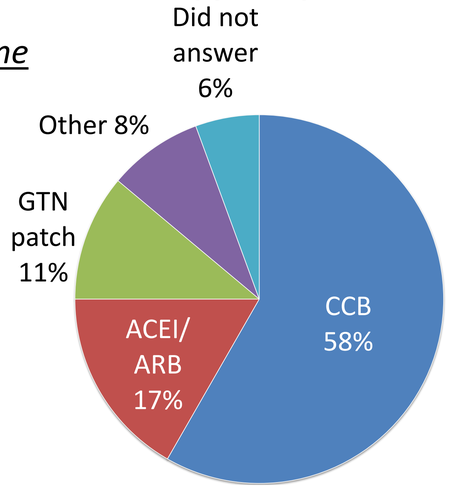


Q2. If yes, when would you initiate pharmacotherapy?

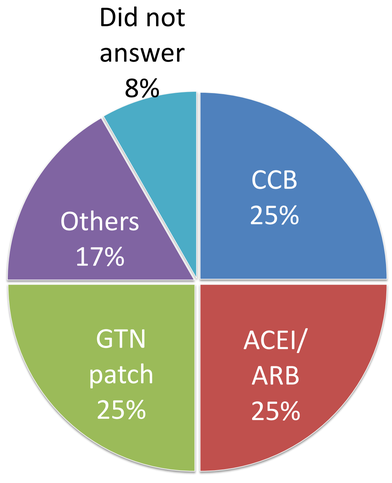


Q4. If pharmacotherapy is required, what first and second line drugs would you use?

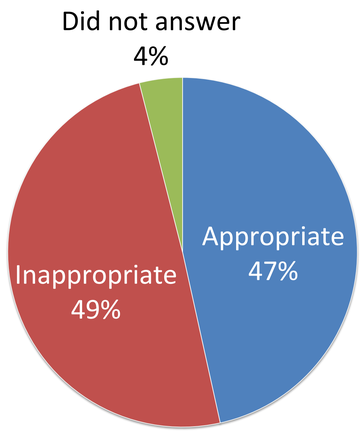
First-line

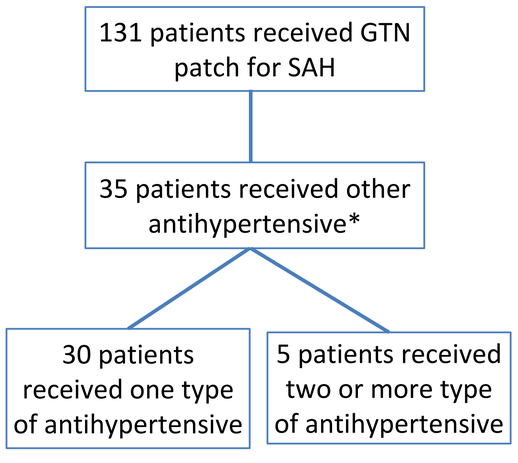


Second-line



Q5. What's your opinion on the use of GTN patch for the management of SAH?





*Of the 35 patients who received other antihypertensive, 22 of them (62.9%) received CCB, mostly amlodipine.

- 28% of survey respondents would initiate pharmaco-therapy when the patient's SBP> 170mmHg. This aligned with the audit results where the mean SBP, prior to treatment of SAH, was 189mmHg.
- 58% of respondents chose CCB as first-line therapy for SAH. GTN patch, CCB, ACEI/ARB are equally chosen as second-line therapy. In the audit, majority of patients received CCB as second-line therapy.

GTN Patch Audit

Demographic characteristics	Medical (n=102)	Surgical (n=29)
Age (y), mean (SD)	75 (15.5)	72 (16.1)
Female, n (%)	55 (53.9)	12 (41.4)
Clinical characteristics		
Know hypertension, n (%)	74 (72.5)	16 (55.2)
Nil by mouth, n (%)	12 (11.8)	7 (24.1)
On regular antihypertensive, n (%)	75 (73.5)	22 (75.9)
Missed regular antihypertensive, n (%)	36 (35.3)	11 (37.9)
Identifiable contributing factors for hypertension, n (%)	35 (34.3)	21 (72.3)

	Medical	Surgical
Blood pressure measurement prior to administration of GTN patch		
SBP mmHg, mean	186.3	191.1
DBP mmHg, mean	91.2	90.8
Maximum drop in blood pressure post administration of GTN patch		
SBP mmHg, mean	53.4	58.3
DBP mmHg, mean	23.8	22.3
Changed in mean arterial pressure mmHg, (%)	**26.2**	**26.5**
Maximum drop in blood pressure post administration of GTN patch and other antihypertensive		
SBP mmHg, mean	64.0	35.0
DBP mmHg, mean	18.1	0
Changed in mean arterial pressure mmHg, (%)	**27.6**	9.0

CONCLUSION

- GTN patches are used in hospitalised patients to acutely lower BP during episodes of SAH.
- There are no clinical benefit from GTN patches in the management of SAH.
- The post-treatment SBP reductions were outside literature recommendations in more than half of the study population.
- Further research with a larger study populations is require to evaluate the efficacy and safety of GTN patches with or without other antihypertensives in the management of SAH.