Managing Hypertensive Emergencies

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24th February 2014
RCP East Midlands Acute Medicine Conference
Brief Overview

- Scene setting
- Define urgency and emergency
- General assessment
- Key management decisions
- Specific clinical scenarios
- Pragmatic follow-up advice
Chronic Hypertension

• Most (85-90%) patients are managed by GP
• Well-recognised guidelines (BHS NICE August 2011)
• Latest research: BHF Pathway Studies / Sprint
• Problems:
  – Secondary hypertension
  – Poorly tolerated / ineffective drug therapy
  – Poor medicine adherence
Friday 23rd January 2015

CURE FOR HIGH BLOOD PRESSURE

Drug-free implant will help to save millions of lives

Taking aim! Boris on manoeuvres in Iraq
The Patient Presenting to the Emergency Department with Severe High BP
Evidence-free / Guideline-free Zone

- ESH/ESC Guidelines for the management of arterial hypertension (2013) – ½ page
- BHS NICE CG127 (2011) – no scope
Classification of Severe High Blood Pressure

• Severe hypertension ~ BP > 180/120 mmHg

• But usually BP ≥ 220/120-130 mmHg:

  ➢ Hypertension Emergency: sudden increase in BP associated with acute end-organ damage such as heart failure

  ➢ Hypertension Urgency: sudden increase in BP associated without acute end-organ damage
Hypertensive Emergencies

- Cerebral Infarction
- Acute pulmonary oedema
- Hypertensive encephalopathy
- Acute aortic dissection
- Acute coronary syndrome
- Eclampsia – *note can occur at lower BP*
- Cerebral haemorrhage
- Acute renal failure
- Phaeochromocytoma - sustained or labile hypertension
Hypertensive Urgencies (or Accelerated Hypertension)

• Malignant hypertension
  – Untreated 10% 1 year survival

• Progressive (not acute) end-organ damage

• Severe post-operative hypertension

• Higher degrees of BP ($\geq 220/120$-$130$ mmHg)
Assessment

• Generic assessment of patient
  – Severity
  – Target organ damage
  – Pointers towards secondary hypertension
  – Current treatment
  – Medicine Intolerance / Adherence
  – OTC / Illicit drugs
  – Clinical examination including appropriate BP measurement
  – Baseline investigations
Emergency v. Urgency

The characterisation essentially determines the direction of treatment
First Key Decision

1. Admit to an intensive or coronary care unit for IV anti-hypertensive treatment to lower the BP over the next few minutes to hours.

2. Admit the patient for oral anti-hypertensive treatment ensuring the patient will be regularly monitored and reviewed aiming to lower the BP over 24 hours.

3. Advise oral anti-hypertensive treatment and allow patient home with appropriate follow-up arrangements.
As a General Rule....... for Hypertensive Emergencies

The aim of treatment is to produce a gradual, but prompt, reduction in mean BP by 15%-20% over minutes to several hours depending on the clinical syndrome

The BP target is ~160/100 mmHg
Intravenous Drug Therapy

• Intravenous therapy is usually titrated against BP control
• Needs intensive monitoring
• BP control should be achieved within 1-2 hours
• Examples:
  – GTN
  – Sodium Nitroprusside
  – Labetalol
  – Nicardipine
Specific Hypertensive Emergencies
Pulmonary Oedema

• Generic guidance for BP targets
• Treatment options:
  – GTN
  – Sodium nitroprusside
• β-blockers are unwise
• Caution with furosemide
Acute Coronary Syndrome

- BP targets: general rule
- NOTE: analgesia and pain control can influence BP

- Use of IV GTN is first line
- Alternatives include: IV $\beta$-blockers (esmolol)
Aortic Dissection

• More stringent BP target
  – Aim 100-120 mmHg systole
  – Within 30 minutes
• First line is IV labetolol / esmolol
• Second line is nitroprusside or GTN
• Again effective opiate analgesia will positively influence BP reduction
Severe hypertension in pregnancy

- (Pre-)Eclampsia may present with moderately elevated BP
- Treatment options include:
  - Magnesium (seizure prevention)
  - Labetolol
  - Hydralazine
  - Metyldopa
- BP target: 130-150/80-100 mmHg
Phaeochromocytoma Crisis

- Usually presents with sustained high BP
- IV phentolamine is $\alpha$-blocker of choice
- Alternative would be IV phenoxybenzamine
- Caution with early $\beta$-blocker use
Cocaine-induced hypertension

• May co-exist with other cardiovascular presentations
• Diazepam is first line
• Second line:
  – IV phentolamine
  – IV nitroprusside / GTN
• Avoid β-blockers
Intracranial Haemorrhage

• Balance of benefits v. risks
• When associated with raised intracranial pressure (ICP), cerebral perfusion may be adversely lowered with BP reduction
• Probably safe to lower BP to 140 mmHg systole within 6 hours
• Nitroprusside is contra-indicated in patients with raised ICP
Ischaemic Stroke

• Variable outcome from clinical trials
• Review: Sully Xiomara and Fuentes Patarroy*
  
• For thrombolysis:
  — Treat if BP > 185/110 to 185/105-110
  
• Where thrombolysis is not indicated:
  — Treat if BP > 220/120: reduce by 15-20%

Swapping to oral treatment

- Wise to consider early introduction of oral drug therapy as appropriate
- Identification of secondary hypertension may be required
- Oral treatment can be orthodox
- May simply be restarting usual BP treatment
- Aim to maintain IV-treated BP
As a General Rule for Hypertensive Urgencies

• Aim for BP reduction to 160/100 mmHg over 24 hrs
• Short acting drugs e.g. sublingual nifedipine are contra-indicated
• Examples:
  – Nifedipine MR (co-prescribed with Amlodipine)
  – Atenolol
  – Lisinopril
• Early discharge for asymptomatic patients (with no ToD)
Follow Up

• Following discharge, BP is likely to continue to reduce gradually
• Early review essential with appropriate monitoring
• Target BP will be 140/90 or lower depending on individual patient co-morbidities
Summary

• Managing hypertensive emergencies is almost an evidence-free zone
• Important to determine if emergency or urgency
• The speed and extent of BP reduction is dependent on the presenting condition
• Early discharge with appropriate FU is usually achievable