

Inter-professional practice development:

The introduction of nurse- led vasopressor infusions for the treatment of epidural related hypotension in a surgical high care unit

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Introduction of Vasopressors

- Background
- Aims
- Implementation
- Results
- The future



Background

- New level one Surgical high care unit (SHCU)
- Skill mix and competency
- Epidural related hypotension



SHCU

- Purpose built
- Nurse led
- Post-op, step-up and step down
- Anaesthetic cover
- Dedicated physiotherapy
- Invasive monitoring



Skill mix and Competency

- Wide mixture of nurses from varied backgrounds
- Cold start
- Shift leaders
- Identify learning needs



Epidural Related Hypotension

- Hypotension is a common problem in patients with an effective epidural.
- Epidural infusions lower the patient's systemic vascular resistance (SVR) and in doing so lowers the blood pressure.
- As a consequence, these patients often receive large amounts of fluid to maintain their BP and urine output.



Aims

- To safely extend SHCU's scope of service to include vasopressor infusions
- To reduce the need for admissions to ITU for patients with epidural related hypotension.



Implementation

- Drug therapy guideline
- Competency
- Teaching session
- Teaching pack
- Practice development
- Anaesthetic support



HYPOTENSION in Elective Patient with EPIDURAL insitu

BP less than 90mmHg or BP with adverse signs

- Tachycardia Collapse
- Oliguria Chest pain
- Confusion

> Ensure Angiotensin II and ACE inhibitors are crossed off drug chart

Call Surgical ST to assess.
In meantime initiate fluid bolus as per protocol and check epidural block

Check Volume Status

Assess:
Cap refill time
Pulse rate
Urine Output <0.3ml /kg/hr
JVP/CVP

Hypovolaemia

Euvolaemia

Check for evidence of post op bleeding

Yes

No

Give stat Gelofusine 500ml

Re-evaluate volume status

Hypovolaemia ?

Yes

No

Give stat Gelofusine 500ml

**If remains hypovolaemic and hypotensive after 1L Gelofusine
Reconsider bleeding, sepsis, cardiac causes**

**Call Surgical ST Urgently
Bleep 1055**

Cross match
Give blood
Hb < 8

Check Epidural Block

High Block > T4

Stop Epidural for 1 hr and review

Just above wound, patient comfortable

Continue at present infusion rate

**Call Anaesthetic ST
Bleep 1622**

**To Start Metaraminol Infusion
Anaesthetic ST must Prescribe**

- > **Metaraminol infusion should be commenced for epidural related hypotension only.**
 - > Ensure patient is euvolaemic
 - > Prescribe Metaraminol 30mg in 60mls 5% glucose
 - > Titrate to response starting low to a max of 5ml/hr
 - > Aim for BP within 20% of preoperative BP
 - > Aim for urine output of ~ 0.3ml /kg/hr
 - > **Refer to DCCQ within 4 hrs of implementation of metaraminol infusion if patient remains oliguric, hypotensive or metaraminol at max dose of 5ml/hr**
- *In patients weighing less than 60kg the max dose should be reduced to 4ml/hr

Competency

- Shift leaders must be competent to level 3
- Band 5 RN's need to be competent to level 2 after induction period
- Band 5 RN's on induction and newly qualified staff up to a year need to be competent to level 1.
- You must be competent to level 2 to be allocated a patient on a metaraminol infusion



Teaching strategy

- Competency based
- Core trainers
- Reference material
- 1 to 1 teaching sessions and group discussion



Practice development

- Supervision of practice until competent
- Reflection support
- Identification of ongoing learning needs
- Working with Multi professional team to ensure awareness and safety



Anaesthetic support

- 24 hour telephone support from an anaesthetic consultant
- Liaison with theatres, recovery and anaesthetists
- Teaching and practice support in SHCU
- Anaesthetic daily rounds to trouble shoot
- Audit of vasopressor use and comparable administration of IV fluids



Results

- Reduction in ITU admissions for epidural related hypotension
- Reduction in amount of IV fluid administered to patients with epidural related hypotension
- Staff now all competent and confident in administration of vasopressors



The future

- Expanding patient group
- Continued audit of use
- Expansion in invasive monitoring
- Development of SHCU staff



Any Questions??



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