



# Postoperative vasopressor usage: a prospective international observational study

## CRF1

### PRE-OPERATIVE

Month and year of birth

Sex [m/f]

Height [cm]

Weight [kg]

Clinical Frailty Scale (Rockwood): point 0 to 9. (Will be explained in final CRF)

Previous medical history:

Coronary Artery Disease: Y/N

Cerebrovascular Disease: Y/N

Peripheral vascular disease: Y/N

Atrial fibrillation: Y/N

Heart failure: Y/N

Hypertension: Y treated and controlled, Y treated but not controlled, No

Diabetes: Takes insulin/managed without insulin/None

Chronic liver disease: Y/N

Chronic respiratory disease: COPD/other/None

Chronic immunosuppression: HIV/other/none

Chronic Kidney Disease: No/Yes/Yes and receives renal replacement therapy

Long-term steroid use: Y/N

Recent/current treatment for cancer (including chemotherapy, radiotherapy, surgery)

Regular medications

ACE inhibitor: Y and took today/ Y omitted today/N

Alpha blocker: Y and took today/ Y omitted today/N

Angiotensin Receptor Blocker: Y and took today/ Y omitted today/N

Beta blocker: Y and took today/ Y omitted today/N

Calcium channel blocker: Y and took today/ Y omitted today

Diuretic: Y and took today/ Y omitted today/N

Regular NSAIDs: Y/N

Regular PPI: Y/N

Haemodynamics

Measurement in the past 6 months, at least 12h prior to the operating room, at rest:

Systolic, Diastolic

Heart rate

The reading immediately prior to induction of anaesthesia:

Systolic, Diastolic

Heart rate

Laboratory results, most recent (if known within 2 months prior to surgery) (we need to ask for units for each hospital)

Creatinine

Albumin

Haemoglobin concentration

### SURGERY

Reason for surgery: Infection/cancer/exploratory/fracture/bleeding/other

SORT (will be implemented in the eCRF from the sortsurgery.com website):

Details of type of surgery

ASA-PS (provide link to favoured definitions, to slightly reduce variability)

Urgency

Cancer treatment Y/N

### INTRA-OPERATIVE

Start of anaesthesia: hhmm DDMMYY

Start of surgery: hhmm DDMMYY

End of surgery: hhmm DDMMYY

End of anaesthesia: hhmm DDMMYY

### SURGICAL

Estimated blood loss (EBL, ml): <250ml, 251-1000ml, 1001-3000ml, >3000ml

### ANAESTHETIC

Blood pressure

Lowest recorded blood pressure: Systolic/Diastolic (MAP can be calculated)

Anaesthesia: tick all applicable

Volatile/TIVA/sedation without securing airway/regional/spinal/CSE/epidural

Endotracheal tube/supraglottic airway/O2 facemask or nasal cannula



# SQUEEZE

Interventions:

Arterial line: Y/N

Central venous line: Y/N

## Intra-operative vasoactive drugs

	No	Y as bolus	Y as infusion
Angiotensin II			
Atropine			
Akrinor <sup>®</sup> (Cafedrin/Theodrenalin)			
Dobutamine			
Dopamine			
Ephedrine			
Epinephrine (Adrenaline)			
Etilefrine			
Glycopyrronium			
Metaraminol			
Milrinone			
Nitrates			
Norepinephrine (Noradrenaline)			
Phenylephrine			
Vasopressin or terlipressin			
Other 1			

Was the patient receiving a vasopressor infusion prior to surgery starting: Y/N

Fluids and blood products received INTRA-operatively only, volume of

Crystalloid:

Colloid (starch, gelofusine, albumin):

Packed red blood cells:

Fresh frozen plasma:

Platelets:

Whole blood or autotransfusion (in ml):

## POST-OPERATIVE

### EARLY EVENTS

- We are interested in which vasoactive drugs were given and how they were given.
- We have split all vasoactive drugs into those that are VASOPRESSORS (in green column) and those that are not (blue).
- We only want additional information (completion of **CRF2**) if it was POSTOPERATIVE, was a VASOPRESSOR and was INFUSED.

Vasoactive drugs	
Vasopressor	Not predominantly vasopressor
Dopamine	Atropine
Epinephrine (Adrenaline)	Dobutamine
Metaraminol	Ephedrine
Norepinephrine (Noradrenaline)	Etilefrine
Phenylephrine	Glycopyrronium
Vasopressin or Terlipressin	Nitrates
Akrinor <sup>®</sup>	Milrinone
Angiotensin II	

We appreciate that many drugs have mixed actions

Following the end of surgery, did the patient receive any

vasopressor boluses Y/N

oral/enteral vasopressor (midodrine) Y/N

infusion Y/N, if Y, then did this continue for more than 1 hour after the end of surgery: Y/N

if yes then this fulfils our criteria for PVI, so please also complete **CRF2**.

Would you liked to have given some vasopressor infusion but lacked appropriate resources to permit this to occur safely?

### LATE COMPLICATIONS = WITHIN FIRST WEEK

Organ support

Pulmonary

Ventilation: invasive mechanical ventilation / NIV / both / neither

Cardiovascular

New dysrhythmia: AF/other/none

Acute Myocardial Infarction (type 1, using WHO 4<sup>th</sup> universal definition)

Renal

Highest creatinine (within the first week) postoperatively: Value/Not available [we calculate KDIGO]

Received renal replacement therapy: Y/N (excluding chronic RRT users)

Gastrointestinal

Received parenteral nutrition: Y/N



## SQUEEZE

### Infection

Treated with antibiotics for a newly diagnosed infection: Y/N

If Y: skin or soft tissue / respiratory / urinary / abdominal / lines / other

### Surgical

Accordion Severity Classification of Postoperative Complications (Annals 2009): 0 (none) to 4 (death)

### END OF EPISODE (intra-hospital follow up to 30 days)

Did the patient receive PVI that started more than 24h following surgery?: Y/N

During this admission, did the patient die: Y/N

Date of discharge, death or end of observational period: DDMMYY

### CRF2: Additional information for those who received postoperative vasopressor infusion (PVI)

PLEASE DO NOT complete if:

- receiving inotropes without vasopressors
- received vasopressor only intra-operatively or for less than one hour postoperatively
- received vasopressors starting more than 24 hours postoperatively

At one hour after the completion of surgery, is the patient:

Receiving continuous infusion of neuraxial anaesthesia/analgesia i.e. epidural infusion	Y/N
Still receiving a sedative infusion	Y/N
Still has an airway in place (endotracheal tube, tracheostomy or supraglottic airway)	Y/N

#### 1. How was it initially assessed that this patient should receive a vasopressor infusion?

Options:

1. Already receiving a vasopressor infusion and attempts to lower the infusion rate produced unacceptable hypotension
2. It was decided that the patient would no longer benefit from further attempts to increase the cardiac output through administration of IV fluids and the blood pressure was unacceptably low. This was on the basis of:
  - A. clinical assessment alone (vital signs, examination, lab results)
  - B. clinical assessment AND a measurement of preload responsiveness using cardiac output monitoring (or some direct surrogate of)
  - C. clinical assessment AND a measurement of preload responsiveness using echocardiography
  - D. clinical assessment AND a previously established maximum for IV fluid administration has been met i.e. 2L or 20ml/kg etc...
  - E. other - free text
  - F. unknown

Day 0 = the calendar day of the start of the operation

#### 2. Organ failure scores

	Day 0	POD1	POD2	POD3	POD4	POD5	POD6
SOFA score							

#### 3. Blood pressure target and levels

	Day 0	POD1	POD2	POD3	POD4	POD5	POD6
Target MAP (if known)							
Lowest recorded MAP							
Highest recorded MAP							

#### 4. Vasoactive drug infusion details

	Day 0	POD1	POD2	POD3	POD4	POD5	POD6
Vasopressor infusion 1							
Vasopressor infusion 2							
Vasopressor infusion 3							



## SQUEEZE

Vasopressor infusion 4							
------------------------	--	--	--	--	--	--	--

For each vasopressor drug, for each day, we want the highest infused rate – for example, noradrenaline 0.5 mcg/kg/min

	Day 0	POD1	POD2	POD3	POD4	POD5	POD6
Inotrope 1							
Inotrope 2							

For each inotropic drug, for each day, we want the highest infused rate – for example, milrinone 0.3 mcg/kg/min

### 5. Fluids

	Day 0	POD1	POD2	POD3	POD4	POD5	POD6
Fluid balance							

A value between -5000 and +20000, in millilitres. If <-2000 or >+5000 then eCRF to ask data entry person to double check. Represents the volume of fluid in (including medications, liquid feeding etc), minus the volume of fluid out (includes urine output, drain output etc...). Option not to provide this information if not known.

### 6. Organ support in the first 28 days

Total number of days of receipt of ventilation (invasive or NIV):

Total number of days of receipt of vasopressor infusion:

Total number of days of receipt of parenteral nutrition:

Total number of days of receipt of renal replacement therapy: