



Care of the Deteriorating Patient in Recovery

NADIA TICEHURST : CLINICAL NURSE EDUCATOR PERI ANAESTHETICS

BENDIGO HEALTH

Intended learning outcomes

- ▶ Describe the components of a comprehensive clinician's handover in PACU;
- ▶ Summarise risk recognition and management strategies in common PACU complications (including airway management ,hypertension and patient agitation);
- ▶ Describe the components of Pain management
- ▶ Describe the roles and responsibilities of the recovery room nurse in relation to ACORN standards

Routine Monitoring

- ▶ Conscious state
- ▶ Pulse rate
- ▶ Blood pressure
- ▶ Perfusion status
- ▶ Oxygen saturation
- ▶ Respiratory rate
- ▶ Temperature

Additional monitoring

- ▶ ECG
- ▶ Arterial blood pressure
- ▶ CVP
- ▶ Urine output
- ▶ Wound drainage
- ▶ Haematology
- ▶ ABG analysis

Receiving patient in Recovery

- ❖ **First check your patient is stable**
- ▶ Lying in an appropriate position
- ▶ Breathing / administer Oxygen
- ▶ Check pulse & BP
- ▶ Receive handover when you are satisfied the patient's condition is stable

Hand over by anaesthetist to PACU nurse following the ISBAR principles

- Patients name & age
- Past history / indication for surgery
- Procedure performed
- Type of anaesthetic and drugs used
- Fluid balance status
- Complications encountered / blood loss
- Analgesia given & anticipated needs
- Specific post-operative orders and reportable parameters

Admission to Recovery

- ▶ Supervision of patients by nursing staff is continuous.
- ▶ Strict vigilance and observation of unconscious patients (1:1).
- ▶ Initial systematic assessment of patient:
 - Airway
 - Breathing
 - Circulation
 - Drips, drains, drugs
 - Extras

Potential complications in Recovery

Complications

- ▶ **Restless/Agitated Patient**
- ▶ **Hypertension**
- ▶ **Hypotension**
- ▶ **Pain**
- ▶ **Airway obstruction**
(stridor, laryngospasm)
- ▶ Respiratory complications
- ▶ Cardiac Arrhythmias
- ▶ Post-obstructive Pulmonary oedema
- ▶ **Hypoxia**
- ▶ **Delayed emergence**

Complications

- ▶ Hypo-volaemia / Haemorrhage
- ▶ Nausea & Vomiting
- ▶ **Hypothermia & shivering**
- ▶ Fever / sepsis
- ▶ Pneumothorax
- ▶ Regional anaesthesia complications
- ▶ Incomplete Reversal
- ▶ Urinary Retention
- ▶ Allergy
- ▶ **Hypoventilation**

Airway complications

Total airway obstruction is silent and lethal!!!

Normal breathing = abdomen and chest rise and fall together

Airway Complications

Hypoxia clinical signs

Early signs:

- Confusion, restless & agitation
- SpO₂ < 90%
- Cyanosis

Late signs:

- Pallor
- Chest pain, ST depression
- Hypotension, bradycardia
- Convulsions, coma, asystole arrest, death

Hypoxia Management

- ▶ 100% oxygen (bag & mask)
- ▶ Call for help
- ▶ Assess airway patency
- ▶ ECG monitoring
- ▶ ABG's
- ▶ Intubation
- ▶ Eliminate causes

Airway Complications

Stridor

- Crowing noise – airflow is forced through a narrowing in the larynx or upper airway
- Leads to complete obstruction

→ GET HELP QUICKLY!!!

Laryngospasm

- ▶ Irritation of the larynx / pharynx
- ▶ Vocal cords clamp closed
- ▶ GET HELP QUICKLY!!!
- ▶ 100% oxygen
- ▶ Jaw support
- ▶ Bag valve mask continuous positive pressure to relieve spasm
- ▶ If no relief – sux / re-intubate.

Hypoventilation

Hypoventilation Signs and symptoms

- ▶ Delayed awakening
- ▶ Airway obstruction
- ▶ Low RR
- ▶ Tachypnoea with shallow breaths
- ▶ Laboured breathing
- ▶ Cardiac irritability / depression caused by severe acidosis

Hypoventilation Causes

- ▶ Most commonly due to the residual depressant effects of anaesthetic agents on respiratory drive
- ▶ Opioid
- ▶ Inadequate muscle reversal
- ▶ Overdose
- ▶ Pharmacological interactions
- ▶ Metabolic factors (hypokalaemia, resp. acidosis)
- ▶ Pain
 - ▶ Increases CO₂ production from shivering, hyperthermia, or sepsis

Delayed waking

Delayed emergence

- Hyperventilation – induced apnoea
- Hypothermia
- Hypercapnea
- Prolonged action of drugs / ↓ metabolism
(cold, liver / renal disease)
- Neurological damage – signs???
- (hypoxia, stroke, emboli, intra-op hypotension)
- Residual relaxant
- Hypothermia

Delayed waking

- ▶ Assess & identify the cause/causes
- ▶ Maintain oxygenation & ventilation
- ▶ Maintain adequate cardiac output
- ▶ Administration of reversal agents
- ▶ Residual anaesthetic agents may be treated with maintenance of ventilation
- ▶ Correction of metabolic disturbances
- ▶ Warming measures if hypothermia is suspected

Agitation /Confusion

Caused by

- ▶ Emergence delirium
- ▶ Hypoxia
- ▶ Intracerebral event
- ▶ Hypotension
- Pre-existing psychiatric condition
- Drugs
- Metabolic

Management

- Oxygen, maintain airway, support ventilation
- Check / correct hypoglycaemia
- Exclude intracerebral event
- Sedation (must exclude hypoxia as cause)

Hypertension

Risks

- ▶ Ideally within 15% of pre-op pressure

Risks of Hypertension:

- ▶ Arrhythmias
- ▶ Myocardial ischemia / infarction
- ▶ Cardiac failure
- ▶ Strokes

Causes

- ▶ Noxious stimulation - pain, intubation or bladder distention
- ▶ Sympathetic activation
- ▶ Vasopressors
- ▶ Fluid overload
- ▶ Raised ICP
- ▶ Hypoxia
- ▶ CO₂ retention
- ▶ Hypoglycaemia

Hypertension Management

- ▶ Oxygen, pulse oximetry, regular BP, ECG
- ▶ BSL
- ▶ Eliminate hypoxia as the cause
- ▶ Check regular meds
- ▶ Check intra-op fluids
- ▶ Notify anaesthetist
- ▶ Treat symptoms
- ▶ ? vasodilator

Hypotension

Causes

- ▶ Hypovolaemia / blood loss
- ▶ Impaired cardiac contractility – ischaemia, arrhythmia, drugs used
- ▶ Cardiac tamponade
- ▶ Tension pneumothorax
- ▶ Anaphylaxis
- ▶ Septic shock
- ▶ Emboli
- ▶ Reduced after load – spinal or epidural block
- ▶ Combination of factors

Management

- ▶ Oxygen
- ▶ DRSABCD
- ▶ ECG (12 lead)
- ▶ Prepare to insert lines
- ▶ Medications
- ▶ Consider causes

Pain

- Subjective
- Influenced by:
 - The neural stimuli received from damaged tissue
 - Memory of previous pain
 - Expected outcome
 - Psychological factors (anxiety)

“pain is a combination of what your patient feels, and their emotional response to it”

Pain Principles

- Pain has 2 principle elements: hurt & fear
- Treat pain before it occurs (pre-emptive analgesia)
- Multimodal analgesia
- Do not let uncontrolled acute pain develop into chronic pain
- Cuddle crying children
- Inappropriate pain – call the surgeon / anaesthetist
- Know the actions of the drugs
- Elderly patients → small doses more frequently
- The cause of pain may not be surgical

Uncontrolled Pain is Harmful

- ▶ Causes restlessness → ↑O₂ consumption, ↑ cardiac work, & can result in hypoxia
- ▶ Contributes to PONV
- ▶ ↑ BP (risk of precipitating cardiac ischemia)
- ▶ ↓ hepatic & renal blood flow
- ▶ Prevents pt. from deep breathing & coughing
- ▶ Discourages pt. from moving their legs
- ▶ Impairs bonding between mum & bub after caesarean
- ▶ ↑ anxiety, disrupts sleep

Conclusion

- ▶ As post-anaesthetic nurses it is important to be aware of possible complications that can occur in the peri-operative setting, know your resources and act appropriately to achieve the best possible outcome.