

INTENSIVE CARE UNIT

It is often difficult to know for certain whether a particular patient needs to be nursed postoperatively in the intensive care unit (ICU), if one exists in your hospital. The person making the decision, whether surgeon or anaesthetist, has to balance the risk of the patient dying from an avoidable cause on the ordinary ward against the waste of expensive resources if a patient is admitted to ICU for no good reason.

Intensive monitoring is generally required in the following cases:

- Cranial neurosurgery
- Head injuries with airway obstruction
- Intubated patients, including tracheostomy
- After surgery for major trauma
- Abdominal surgery for a condition neglected for more than 24 hours
- Chest drain in the first 24 hours
- Ventilation difficulties
- Airway difficulties, potential or established: e.g. post-thyroidectomy, removal of a large goitre
- Unstable pulse or blood pressure, high or low
- Anuria or oliguria
- Severe pre-eclampsia or eclampsia
- Surgical sepsis
- Complications during anaesthesia or surgery, especially unexpected haemorrhage

- Hypothermia
- Hypoxia
- Neonates, after any surgery.

Postoperative ventilation

Mechanical ventilation (IPPV) may be a planned part of postoperative management for a major operation or decided on at the end of surgery because circumstances demand it. IPPV should be continued postoperatively under the following circumstances:

- Respiratory depression or oxygen saturation <80%
- Deteriorating general condition
- Severely distended abdomen
- Severe chest trauma
- Head injury or after intracranial surgery.

Avoid giving long acting muscle relaxants to facilitate IPPV. If the patient is “fighting” the ventilator, ask why? Is he/she hypercarbic? In pain? Hypertensive? Treat these needs first before giving a relaxant.

There are non-surgical reasons for ventilation, including organophosphate poisoning, snakebite, tetanus and some head injuries, but probably only if the patient is breathing on admission.

Usually the decision to ventilate is quite easily made from the above observations. *But, if in doubt, ventilate.*

With no ventilator, a patient in respiratory failure will rapidly die of hypoxia and hypercarbia. Many people die purely for lack of a short period of ventilation in the postoperative period or after trauma.

Discharge from the ICU

The decision to discharge the patient from the ICU very much depends on the quality of care to be found on the ward to which the patient is being transferred. The following conditions should be met before discharging the patient from ICU:

- Conscious
- Good airway, extubated and stable for several hours after extubation
- Breathing comfortably
- Stable blood pressure and urine output.
- Haemoglobin >6 g/dl or blood transfusion in progress
- Minimal nasogastric drainage and has bowel sounds, abdomen not distended
- Afebrile
- Looks better, sitting up, not confused.

Pressure for beds to treat more urgent cases may mean that these guidelines have to be modified. If a patient dies after discharge from ICU, try to find

out why the death took place and to learn from it, especially if it appears that the death was avoidable.

Try to put a system in place where patients discharged from ICU are followed up for a week. Find out what happened to them.

Equipment for the ICU

The ICU does not necessarily need to have ventilators or other expensive machines. An ICU might be a ward where:

- Oxygen is available
- Drips are kept running overnight
- At least hourly measurements and observations are made of:
 - Blood pressure
 - Pulse rate
 - Urine output
 - Oxygenation
 - Conscious level
 - Other general observations of the patient.

The monitoring of the patient *all night long* is the deciding factor in the success or failure of the ICU. Another important feature is whether staff take action when the measurements or observations show that something is wrong.

The provision of one or more simple, reliable electric ventilators (not gas or

oxygen dependent) will double the usefulness of a basic ICU. Small, portable mains/battery ventilators with integral compressors are available, although they are relatively expensive.

The pulse oximeter should be the minimum standard of monitoring in every operating room where regular major surgery is carried out.