7. POSTOPERATIVE CARE

Immediate postoperative period is the crucial period when numerous physiological and pharmacodynamic changes occur due to surgical trauma and anaesthesia (due to drugs used for induction, sedation, reversal and muscle relaxants). There are a number of issues which must be addressed in the postoperative period to optimise recovery.

Postoperative considerations

Management of elderly patients after major surgery

Older patients have generalized deterioration of organ function and loss of reserve capacity to withstand even minor stress like surgical trauma causing life-threatening complications. The disturbances in cardio-respiratory function should be carefuly monitered in high Dependency unit. The condition of older patients can change rapidly and therapy may need to be adjusted every few hours if optimum cardio-respiratory function is to be maintained.

- Diagnose and treat complications quickly
- Plan intensive monitoring for high risk elders, during surgery and in postoperative wards
- Institute invasive monitoring and elective ventilation when required
- Continue postoperative care to increase the rate of recovery

Early postoperative period

Monitoring of vital parameters

Monitoring the vital parameters like pulse, blood pressure, respiratory rate, ECG, oxygen saturation and the urine out put and immediate intervention to prevent postoperative complications.

Monitoring the following are essential

- Blood pressure, temperature, pulse, respiratory rate
- Electrolytes, glycemic control, liver and renal functions
- Good nutritional intake and bowel movement
- Fluid balance and urine output
- Drain and wound status and appropriate care
- Medication for pain relief
- Mental and cardio respiratory status

The three factors hypotension, hypoxia, hypothermia which are interlinked to each other and produce combined ill effects leading to life threatening complications in the elderly.

Hypoxia

Abdominal pain and the effects of opioid drugs given to relieve postoperative pain can depress respiratory function. It is necessary to give oxygen to all elderly patients after surgery to prevent hypoxia. Continuous monitoring by pulse oximetry and intervention will prevent hypoxia.

Postoperative hypoxia could persist for several days, especially after abdominal surgery, and also after hip surgery. Oxygen administration at 2 litres / minute intermittently through twin nasal catheter is an effective way of preventing this hypoxia and is well tolerated by patients.

Hypothermia

There is heat loss in the operating room under general anaesthesia. The older patient is often cold after lengthy procedures and rewarming will take a longer time. It is necessary to cover the patient with warm blankets.

In the cold patient, the drugs injected into cold muscles will not be absorbed into the circulation until the muscle warms and the vessels dilate. Hence the first dose of opioid analgesic should always be given intravenously and the intramuscular route reserved for the warm patient.

Hypotension

Anaesthetic drugs and muscle relaxants may lead to profound vasodilatation and lot of fluid is diverted to extra cellular space. The fluid loss is poorly tolerated in older patients and appropriate care and infusion should be started. Hypotension causes poor perfusion thereby leading to hypoxia. Continuous BP monitoring, pulse oximetry and appropriate fluid infusion (25to30ml/kg body weight) are essential. Plasma volume is maintained adequately with appropriate intravenous fluids, blood and its components or plasma expanders.

The metabolic response to surgical trauma leads to sodium and fluid retention. Fluid administration should be carefully monitored to avoid fluid overloading. Fluid over load is hazardous due to poor cardiac function leading to right heart failure in the elderly.

Urine out-put

This should be monitored after major surgery, and maintained initially by ensuring adequate fluid volume. Measurement of the central venous pressure can provide valuable information about the adequacy of fluid replacement. Use of indwelling catheters should be restricted as much as possible. Care should be taken if bladder catheter is used for a prolonged period.

Orientation

Immediately after surgery, many older patients are confused. Such confusion is more likely to last longer, especially if they have been given long-acting sedative and amnesic drugs.

Confusion can be reduced by restoring spectacles and hearing aids, sitting patients up so that

they can see the surroundings properly and returning them as soon as possible to their more familiar ward environment, and encouraging them to assume some sort of control over their life. i.e., allowing them to have drinks and food at the earliest safe opportunity and encouraging familiar visitors. A careful examination should always be made in delirious patients for underlying acute illness or the effects of drug excess or withdrawal.

Postoperative analgesia

Adequate management of pain is critical. Patient should be questioned frequently about their pain level. Pain medication should be given on a regular basis and whenever necessary.

Continuous epidural anaesthesia is valuable in patients having abdominal or thoracic surgery with poor respiratory function.

After minor surgery, oral soluble paracetamol can be given early for relief of less severe pain. Opioid drugs for severe postoperative pain are best given initially intravenously in incremental doses until the desired effect is achieved. Adequate pain control decreases the postoperative morbidity and reduces the hospital stay.

Care of drains and wound

After major surgery, drain are kept for draining the collected fluid, blood etc., the amount of drainage should be carefully monitored and appropriate fluids / blood replaced. In case of large quantities of drainage in a short time, or severe blood loss, the wound should be reexplored. Wound should be dressed properly and kept clean and dry, change of dressing should be done aseptically if required. Drain sites are to be properly covered with adeqate sterile pads.

Late postoperative period

Control of infection

Control of infection is done with appropriate antibiotics after culture and sensitivity if required. If there is discharge from the wound, or respiratory or urinary infection is suspected, sputum and urine culture sensitivity should be done.

Reducing hospital stay, eliminats the risk of opportunistic infection will reduce postoperative respiratory failure in case of upper abdominal surgeries to a greater extent.

DVT prophylaxis

Prophylaxis of deep vein thrombosis is advocated for major surgeries and orthopaedic surgery. Low molecular weight heparin plays a vital role in prevention of deep vein thrombosis. Early ambulation of patient reduces deep vein thrombosis.

Early mobilization

Problems associated with immobility are furnished below. Hence, patient should be ambulated as early as possible. They are supported by physiotherapist for both lung and limb exercise.

- Atelectasis and pneumonia
- Orthostatic hypotension
- Decreased cardiac output and stroke volume
- Urinary retention
- Negative nitrogen balance
- Depression and sensory deprivation
- Decrease tissue sensitivity to insulin
- Deep vein thrombosis
- Constipation and fecal impaction
- Loss of muscle strength
- Decubitus ulceration.

Prevention of pressure ulcers

Prevention of pressure ulcers is a critical part of postoperative management. Patient has to be turned frequently in the bed to prevent the pressure ulcers. Use of alpha beds and keeping the back dry as well as early mobilization prevents pressure ulcers.

Rehabilitation and follow up

It is important to continue the comprehensive care by inter disciplinary team life long. Some of the elders may not have proper home or care giver or family members to take care of them after discharge. Social service organizations and old age care homes should be identified and proper care should be given.

Maintenance of function

It is very common for older people to suffer a decline in functional status in the postoperative period. Encouraging the patient to do his /her own day-to-day activities is important. It is often important to educate the family members about the need to mobilize the patient early to prevent complications.

Psychological support by trained psychologist and medical social workers and communty health workers will go a long way in cases where the family support is not available.