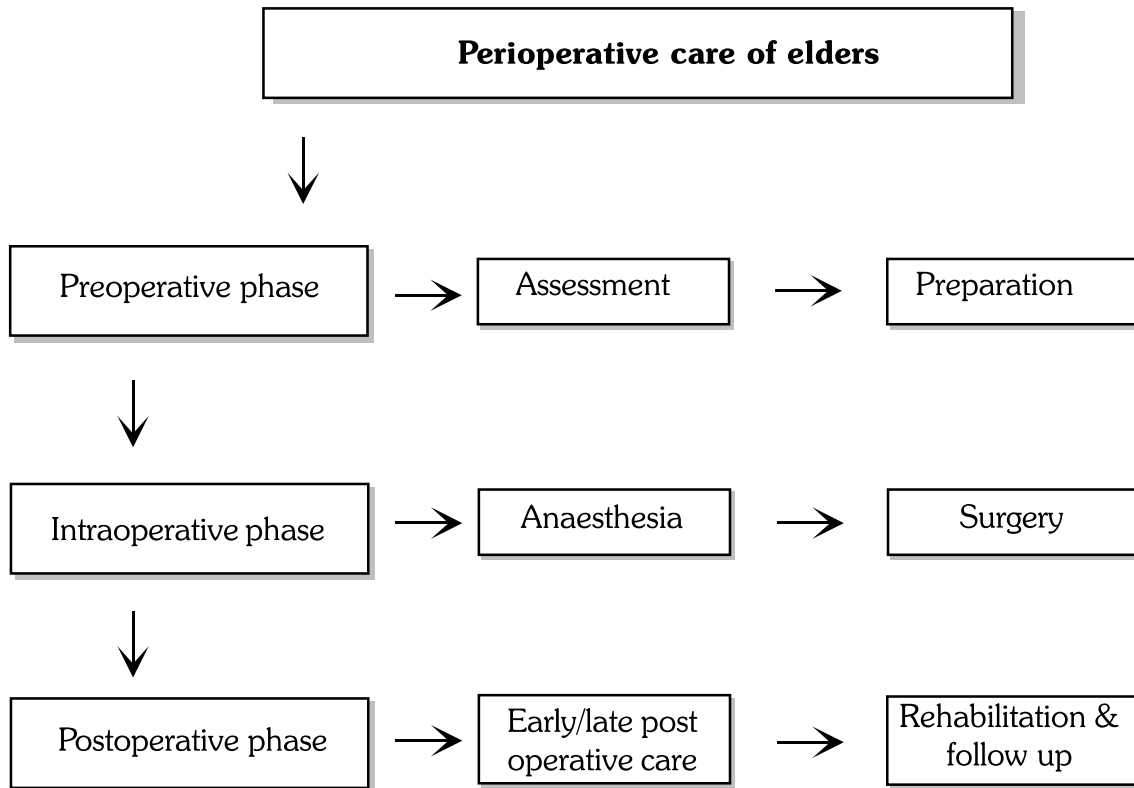


5. PREOPERATIVE ASSESSMENT AND PREPARATION

In older persons, it is possible to reach the success rates comparable to that of younger patients with well-planned surgical procedures. The following three phases of peri-operative care have to be followed step by step meticulously for the best possible outcome of surgical procedures in the elderly.



The safety and success of surgery depend on the following

- ♦ Early correct diagnosis
- ♦ Preoperative assessment and correction of co-morbidities
- ♦ Good preoperative preparation
- ♦ Smooth conduct of anaesthesia
- ♦ Correct surgical technique
- ♦ Intensive postoperative care
- ♦ Anticipating complication (s) and early intervention (s)
- ♦ Continued follow up and rehabilitation
- ♦ Dedicated team

Preoperative multidimensional assessment

Preoperative multidimensional assessment of the geriatric patient is provided below

- ❖ Comprehensive history
- ❖ Medication review
- ❖ Physical examination
- ❖ Cognitive and functional assessment
- ❖ Nutritional assessment
- ❖ Investigations
- ❖ Surgical risk assessment

History and medication review

- ◆ History may be vague or may not be forthcoming
- ◆ Personal history which includes smoking, alcoholism, previous illnesses like recent myocardial infarction, pulmonary tuberculosis, COPD, AIDS, cancer, diabetes, previous surgery should be elicited
- ◆ Use of medications, over the counter drugs and herbal preparations and ingestion of aspirin, NSAID, diuretics
- ◆ Oral hypoglycemic agents, sedatives, etc., should be obtained and need to be considered before surgery

Physical examination

- A comprehensive physical examination to identify co-morbid conditions should be performed
- Sometimes the underlying disease may not reveal any physical sign
- The physical signs may be altered
- The signs and the symptoms may not be contributing to the real problem
- Cardiovascular or respiratory signs like tachycardia, hypertension, JVP elevation, arrhythmias, murmurs, S3 gallop, rales and ronchi, bronchospasm and chest deformity should be identified.

Nutritional assessment

Poor nutrition causes poor wound healing, leading to

- Wound dehiscence
- Infection
- Development of pressure sores

- Weakness
- Loss of functional independence
- Assess fluid status along with the nutritional status
- Estimate serum albumin level (> 6mg/dl normal)
- Consider parenteral nutritional supplementation. TPN is useful in gastric outlet obstruction, pancreatitis, alcoholism, malnutrition and postoperative patients.

Cognitive and functional assessment

- Baseline mental status allows the physician to recognize delirium
- Mini mental state examination is required to diagnose mild dementia, the presence of which indicates a poor prognosis
- To predict potential problems and to plan interventions
- Poor functional status carries a high surgical risk

Investigations

Base line investigations (refer page no. 7)

- Special investigations to assess the status of cardiovascular, respiratory, neurological, renal and hepatic functions in addition to routine investigations, resulting in delay and increased cost of surgical treatment.
- Special investigations like echocardiography, angiography, CT, MRI, ultrasonogram, pulmonary function test, thyroid function tests, ABG and enzyme analysis are done depending on patient's condition and indication.
- Investigations may be troublesome (barium meal, enema studies, endoscopy etc.),
- Costly (CT, MRI)
- Risky (coronary angiogram)
- Non contributory in some
- May show multiple or serious underlying problems not related to the present symptoms that may warrant immediate surgical interventions like CABG for coronary artery disease.

Surgical risk assessment

- Surgical risk assessment includes the anaesthetic risk also
- Cardiovascular and pulmonary complications are common causes of peri-operative morbidity and mortality in elders (25 to 30%)
- Identify patients at high risk for the type of surgery proposed
- In high-risk elders, consider modifying, delaying or canceling the proposed surgery after weighing the relative risks and benefits of surgery and condition of patient.

- Often there is an increase in arterial stiffness, atherosclerosis, myocardial dysfunction, hypertension, thromboembolism and hyperlipidemia making them susceptible to complications. Acute fall in ventricular preload leads to hypotension and acute increase leads to ventricular and pulmonary congestion. The capacity to increase the cardiac output in response to intra and postoperative challenges is a fundamental determinant of survival, is reduced in elders.

- The respiratory problems like PT, pneumonitis can cause increased mortality and morbidity.

- CNS problems such as dementia and delirium are associated with poor prognosis

Preoperative considerations

The surgeon should consider the following prior to surgery

- ◆ The diagnosis, nature of the disease, its natural course, the prognosis, presence of co-morbid conditions and the general condition of the patient should be taken into account.
- ◆ The benefit of surgery should be weighed against the possible risk and complications
- ◆ Alternative to high-risk surgery and the possibility of a conservative management should also be discussed with the patient and family members / care givers
- ◆ Any requests or preferences made by the patient should also be considered
- ◆ A fully equipped operation theatre, post operative ward with monitoring and resuscitative facilities, and good surgical team are preferable
- ◆ The optimal timing of surgery to be fixed for better outcome

Preoperative preparation

Consent for surgery

An informed consent in writing from the patient and/or his relatives is essential before any procedure is undertaken

Counseling

The surgeon should gain the confidence of elderly by his kind approach and frank discussion about the problem, and possible benefits and risks especially in cases involving amputation or possible disability or disfigurement.

Preoperative counseling by the doctors, trained staffs, social workers and patients who had undergone mutilating surgery like mastectomy or colostomy, will prevent or reduce depressive effect.

Prevention of respiratory complications

Respiratory complications can be prevented and also improved through

- ❖ Cessation of smoking
- ❖ Treating bronchospasm

- ❖ Reducing secretions
- ❖ Chest physiotherapy

Aspiration prevention

Prevention of aspiration is the most important aspect of perioperative care of the elderly.

- ◆ Starving the patient for 6-8 hours prior to surgery
- ◆ Ryles tube aspiration during surgery

Preparation of bowel

- ◆ GIT surgery needs complete evacuation and cleansing of alimentary tract
- ◆ Sterilization of the bowel by oral anti microbial agents should not be done routinely
- ◆ Routine nasogastric tube aspiration and strong purgatives, enemas are not indicated in elders, since it produces dehydration and exhaustion

Others

Blood grouping and Rh typing: Blood grouping and Rh typing should be done and reserve necessary units of blood for possible requirement.

Sleep: Good sleep should be ensured on the night before surgery (mild sedation)

Skin preparation: Skin preparation of local area viz., haircut, shaving of local parts should be done, taking care not to injure the skin. Patient should be given a good bath before surgery.

Bladder catheterization: Insertion of urinary catheter to prevent post operative distension of the bladder and to measure the urine output during surgery are important in the elderly.

Pre-medication: Routine pre-medication for anaesthesia is best avoided in the ward and is given in the operation theater under the direct supervision of the anaesthetist.

Prophylactic measures

Antibiotic prophylaxis: Prophylactic antibiotics are essential in elders undergoing valvular surgery with risk of endocarditis, oral, bowel, biliary, pulmonary and urological procedures.

Immunization: Tetanus immunization by tetanus toxoid injection may be given during the first consultation to allow time to develop active immunity. It is essential to give Inj. Tetanus immunoglobulin 500 units intra muscularly before surgery to achieve passive immunity, especially in trauma cases, road traffic accident injuries and in emergency surgery.

Thromboembolism: This complication is very common among the elderly especially in Caucasians. To prevent thromboembolism, measures like pneumatic compressive stockings, exercises, early ambulation and anticoagulant therapy are instituted.

Preoperative phase

Selected aspects of preoperative assessment and preparation are provided below in table 4

Table 4 Preoperative assessment and preparation

Preoperative assessment (Multidimensional geriatric assessment)	Preoperative preparation
Complete history Chief Complaints H/o present illness	Investigation for the diagnosis and co-morbid conditions. Assurance, Counselling
Past history Previous medical illness / surgery (DM, HT, IHD, Laparotomy, Hernia)	Treatment of co-morbid conditions. Improve cardiovascular, respiratory functions control diabetes and hypertension
Medication review Non-prescription OTC drugs Herbal and native medicines NSAIDs, Aspirin, OHA, Sedatives H/o Drug allergies.	Stop unnecessary OTC drugs, aspirin, oral hypoglycaemic drugs before surgery.
Personal History Habits, attitudes, beliefs and life style. H/o smoking and alcoholism.	Stop smoking and alcohol intake. Exercise and chest physiotherapy to improve respiratory reserve.
Family and caregiver History Available family support system Caregiver availability/ stress	Detailed discussion with patient and their family, (and referring physician) about the diseases, procedures planned and its complications and expected outcome. Ascertain patient's wishes, preference (s) Get advance directives Informed consent for the procedure.
Financial support	Identify Insurance, funding agent, donors.
Physical examination General Examination Lymphadenopathy, ascities, edema CVS, RS, CNS, abdomen, scrotum and perineum.	Assess general condition operability fitness for anesthesia Chest physiotherapy / counselling
Cognitive Assessment	Baseline assessment of cognitive function to be recorded
Functional Assessment	Baseline functional assessment like ADL's, IDL's to be recorded
Nutritional Assessment	Under nourishment, hypoproteinemia, anaemia, dehydration and electrolytes imbalances to be corrected. Parenteral nutrition in conditions like gastric outlet obstruction, pancreatitis, etc.,
Surgical risk assessment including Anaesthetic risk	The benefit of surgery to be weighed against the possible outcome and complications Pre operative anesthetic assessment