



Department of Anesthesia Techniques
**Title of the lecture: - Anesthesia for geriatric
and obese patients**

Dr. Bassim Mohammed

Dr. Hawraa Diaa

B.M.T. Montadher Talib



Anesthesia for Geriatric

(Practical Anesthesia)

3^{ed} stage

By:

Dr. Bassim Mohammed

Dr. Hawraa Diaa

B.M.T. Montadher Talib

Geriatric anesthesia: - is defined as providing anesthetic care for patients older than 65 years old in which perioperative morbidity and mortality are greater.

- The elderly patient typically presents multiple chronic medical conditions.
- these complications can be minimized by careful preoperative assessment.

Age-Related Anatomic & Physiological Changes

1. Age-related changes to the CVS

- ♠ Increase blood pressure and afterload on the heart. (e.g., from hypertension).
- ♠ Diastolic dysfunction minimizes the ability to adjust stroke volume.

2. Age-related changes to the pulmonary system

- ♠ increase functional residual capacity (FRC) by age 65 years.
- ♠ Pulmonary elasticity, lung and chest wall compliance, total lung capacity (TLC) will decrease.
- ♠ Atelectasis, pulmonary embolism and chest infections are all more common in elderly patients,
- ♠ Both anatomic and physiological dead space increase.

3. Age-related changes to the nervous system

- an age related decline in central nervous system (CNS) function is common. As a result, confusion is more common, both pre and post operatively.

4. Age-related changes to Renal System

- ♠ Progressive decrease in glomerular filtration rate (GFR) because of a decrease in renal blood flow, lead to an increased risk of acute renal failure.

5. Age-related changes to Liver and GIT

- ♠ Liver mass, hepatic blood flow, and hepatic reserve decrease. leads to decreased protein synthesis, including albumin. Decreases in drug metabolism.

6. Age-related changes to Endocrine

- The incidence of diabetes is increased in the elderly. Diabetics frequently have cardiovascular, renal, neurological and visual impairment, and require control of blood glucose levels during the perioperative period.

7. Musculoskeletal Changes

- ♠ Muscle mass is reduced in elderly patients.
- ♠ Increase in percentage of body fat.
- ♠ Veins are often frail and easily ruptured by intravenous infusions.
- ♠ Arthritis usually affect the elderly. This may limit exercise tolerance

8. Age-Related Pharmacological Changes

Aging produces both pharmacokinetic (the relationship between drug dose and plasma concentration) and pharmacodynamics (the relationship between plasma concentration and clinical effect) changes.

The principal pharmacodynamics change associated with;

- ♠ Aging is a reduced anesthetic requirement, represented by a reduced MAC.
- ♠ Drugs that are not significantly dependent on hepatic or renal function or blood flow, such as atracurium or cisatracurium, are useful.

Pre-operative preparation

1. A full history and thorough clinical assessment is required.
2. An ECG is required for all patients.
3. A chest X ray should be arranged for patients with known malignancy or possible tuberculosis.
4. Assessment of exercise tolerance and functional ability is important.
5. The American Society of Anesthesiologists (ASA) score should be recorded.
6. Pre-oxygenation: 8 deep breaths of 100% oxygen within 60 seconds with an oxygen flow of 10 L/min

Induction of anesthesia

- Thiopentone or propofol are both useful but should be given slowly to avoid overdose.
- An induction dose of propofol may result in hypotension and require a vasopressor.

- Avoid ketamine in the presence of cardiac disease as the tachycardia and hypertension that may result can increase myocardial oxygen consumption and precipitate ischemia.
- Maintenance of anesthesia with inhalational agents is a suitable technique for elderly patients.

Post-operative care

- Oxygen therapy especially following abdominal or thoracic surgery.
- Nasal cannula is often better tolerated than facemasks.
- High dependency care or intensive care facilities may improve the long term outcome of elderly patients.

Choose the best answer

1- For Geriatric anesthesia all true except one:

- a- providing anesthetic care for patients older b- morbidity and mortality are greater
 c- presents multiple chronic conditions d- **Both anatomic and physiological dead space decrease.**

2- Age-Related Anatomic & Physiological Changes for geriatric:

- a- Increase BP and afterload on the heart b- increase (FRC) by age 65 years.
 c- **Increase in glomerular filtration rate (GFR)** d- Increase in percentage of body fat.

3- In Pre-operative preparation all true except one:

- a- A full history and assessment is required b- ECG is required for all patients.
 b- Pre-oxygenation before induction **d- Muscle mass is increase in elderly patients.**