

الجامعة السورية الخاصة
كلية الطب البشري
قسم الجراحة

Perioperative management of the high-risk surgical patient

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LEARNING OBJECTIVES

- The factors that put a patient at high risk from surgery and anaesthesia
- The problems of patients being treated as an emergency
- Classification and optimisation of high-risk patients
- The value of the critical care unit in the perioperative period

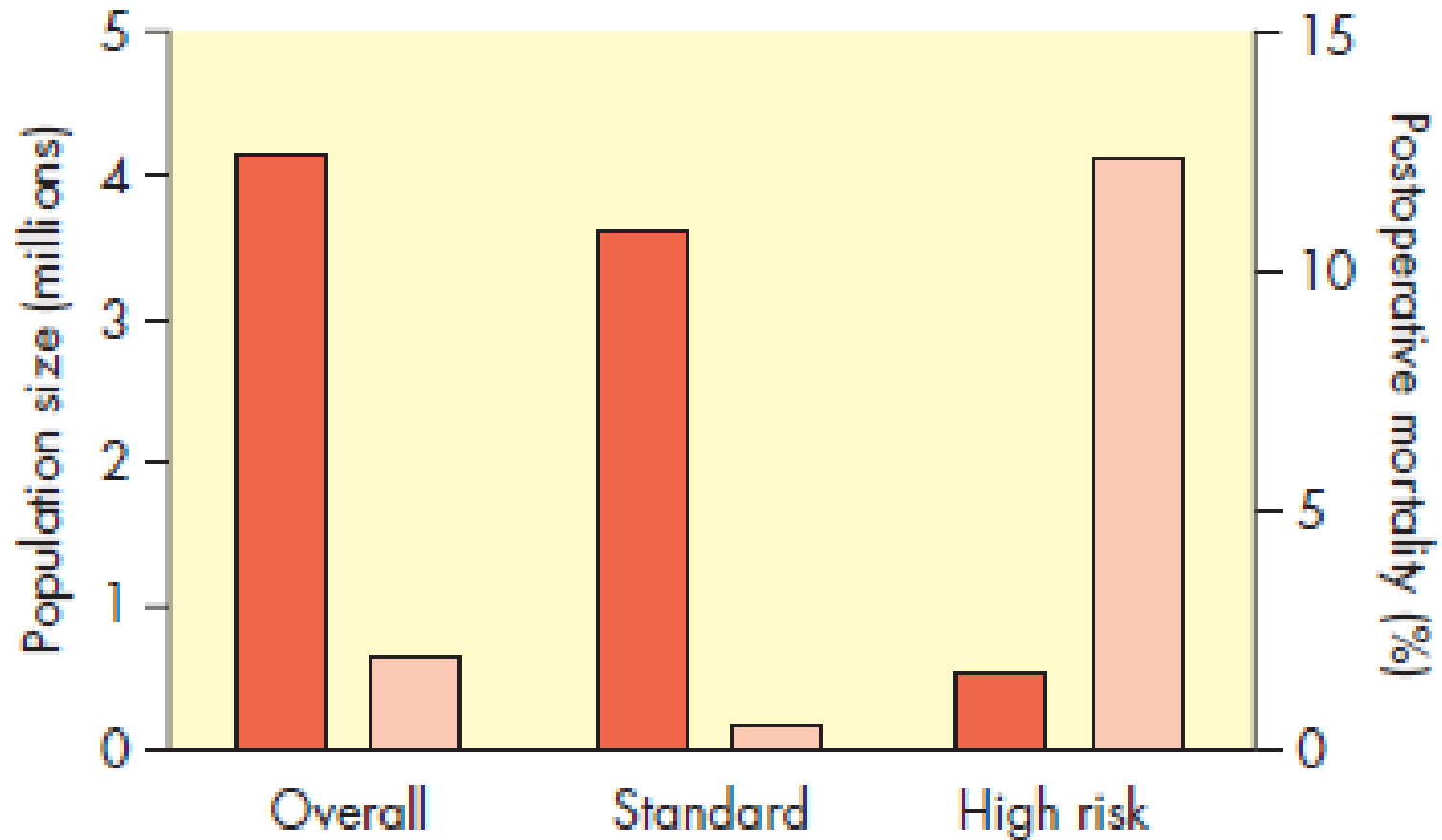
Risk of Surgery

- Every surgical procedure involves some risk of significant postoperative complications or death , it is well below 1% .
- Between 10% and 15% of in-patient surgical procedures appear to fall into this high-risk category and therefore represent an important cause of death and disability .

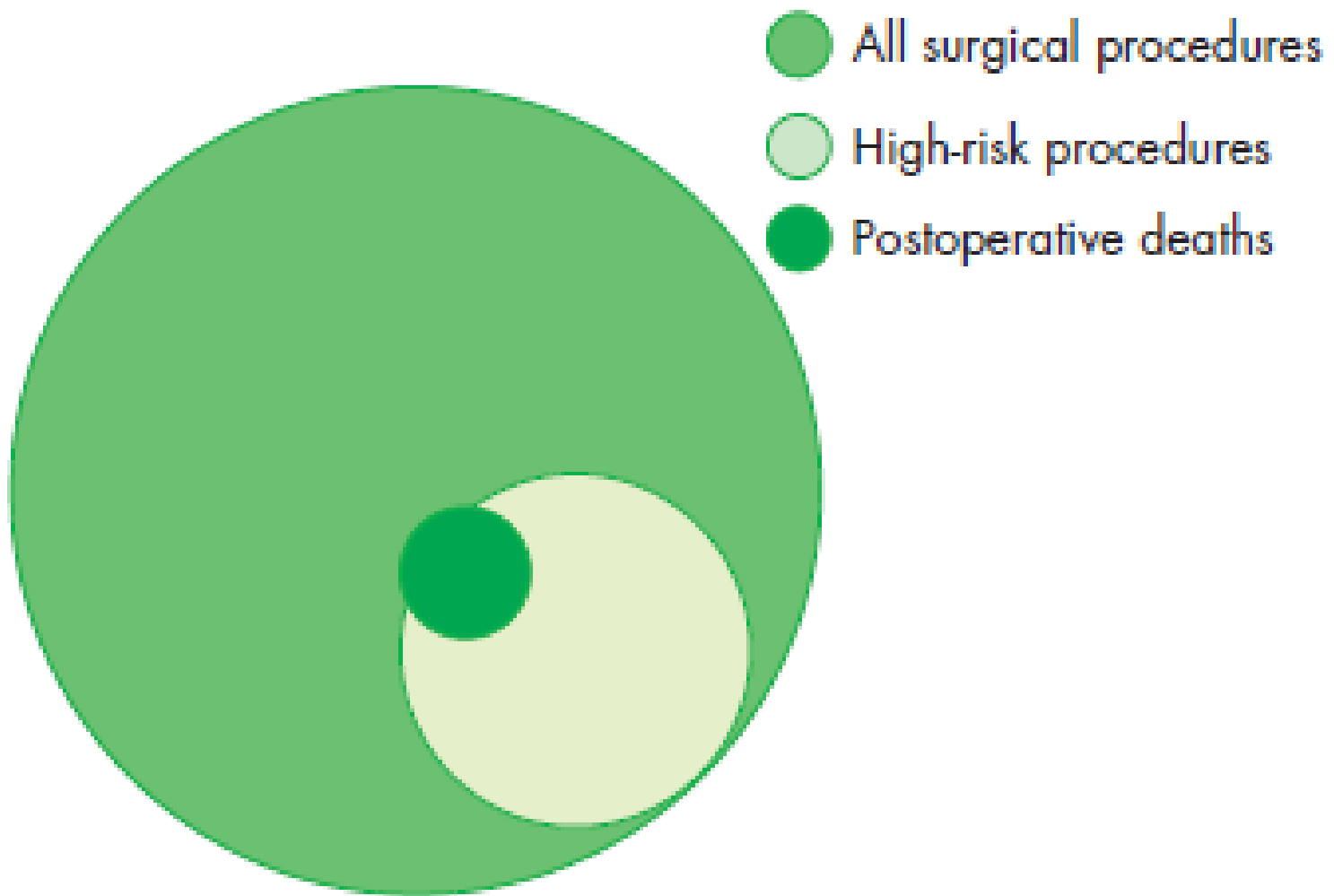
The high-risk surgical population

- Elderly .
- Patients with coexisting medical conditions .
- Complex or major surgery .
- Emergency Surgery (no time for optimisation).

Early identification and optimal care of the high-risk surgical patient will result in a substantial reduction in risk.



Size and mortality rates for different populations of surgical patients.



Distribution of postoperative deaths within the surgical population.

Reasons for Risk Factors

- Patient factors .
- Surgical factors .
- Perioperative care factors .

Patient factors

- Ischaemic heart disease .
- Chronic obstructive pulmonary disease .
- Diabetes .
- Advanced age .
- Poor exercise tolerance;
- Poor nutritional status.

Surgical factors

- Emergency surgery .
- Major or complex surgery .
- Body cavity surgery .
- Large anticipated blood loss .
- Large insensible fluid loss .
- Prolonged duration of surgery .

Perioperative care factors

- Inadequate critical care facilities .
- Insufficient patient monitoring .
- Lack of early intervention as complications develop.
- Insufficient saved blood .

Preoperative assessment for risk

- The history should focus on cardiac and respiratory problems .
- Exercise tolerance gives a good guide to cardiac reserve .
- Age and body mass index are useful indicator .
- Check alcohol and tobacco intake .
- Check medications .

Review medical treatment before surgery

- Coronary angiography may be indicated for patients with ischaemic heart disease
- Asthma and COAD may require bronchodilators and steroids
- Antibiotic therapy is not necessarily indicated for patients with chronic sputum production
- Patients should stop smoking
- Patients with renal failure need their surgery planned around dialysis
- Oral medication can be given with water even when a patient is 'nil by mouth'
- When possible, postpone surgery until the patient is optimised .

COAD : Chronic Obstructive Airway Disease

Assessment of the surgical patient in critical care

- **Basic clinical assessment** (These generally include pulse rate, respiratory rate, arterial pressure, urine output, conscious level , capillary refill time and the presence of peripheral cyanosis.) .
- **Continuous electrocardiography(ECG)** .
- **Pulse oximetry (SaO₂)**.
- **Invasive arterial pressure monitoring** .
- **Central venous pressure monitoring (CVP)** .
- **Arterial blood gas analysis** .

General critical care

- Blood glucose – tight control using an insulin sliding scale .
- Blood transfusion reaction – harden threshold for transfusion to 8 g dl⁻¹ .
- Steroids if there are signs of adrenocortical depression .
- Start enteral feeding early (jejunal feeding tubes) .
- Protect against deep vein thrombosis .