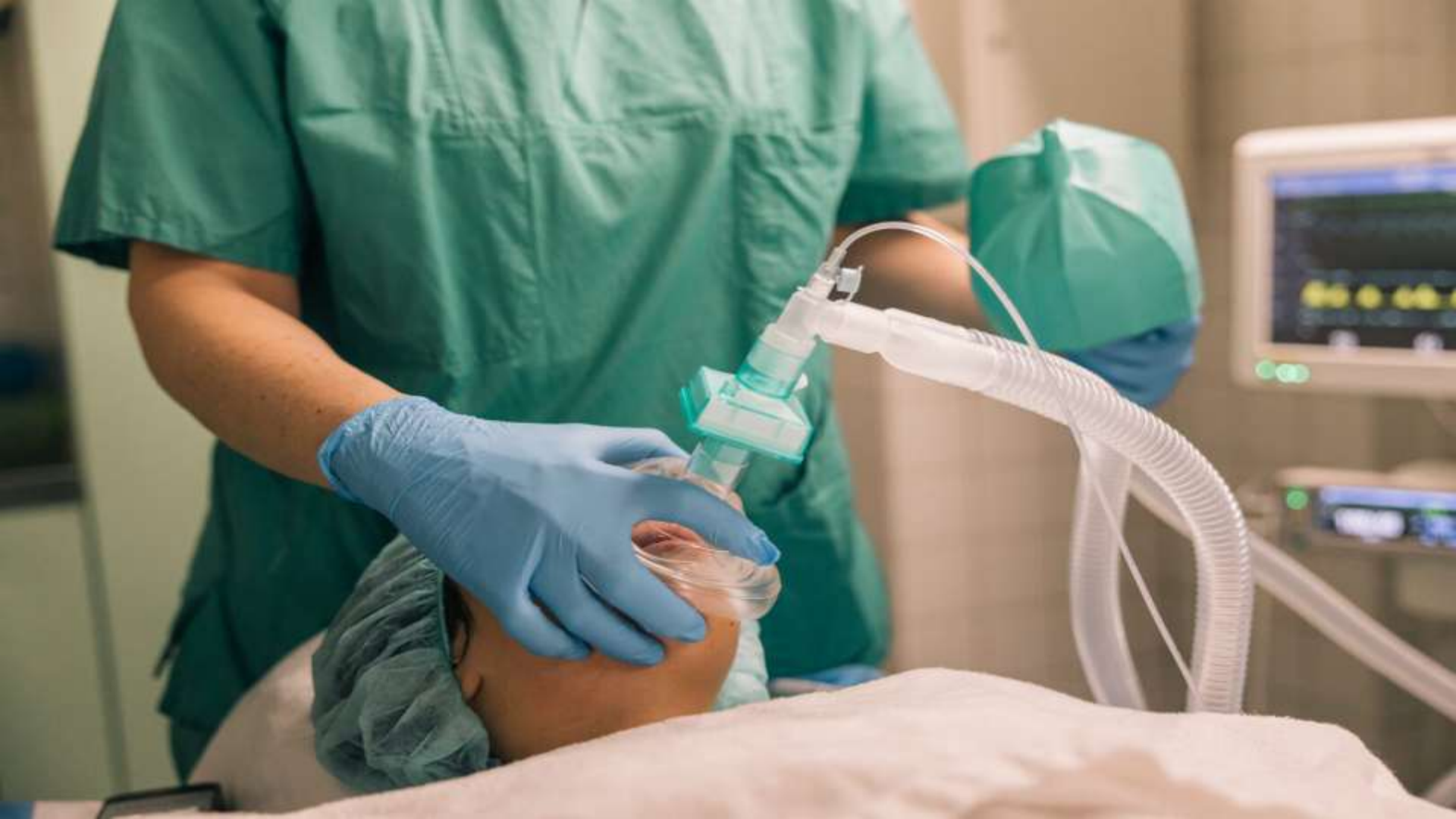

# Gateway to safe anaesthesia

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# Pre-anaesthetic assessment

- A process of clinical assessment that precedes the delivery of anesthesia and care during surgical and non surgical procedure

- The standard and quality of care given by an anesthesiologist may be measured by this mechanism

# History of pre-anaesthetic assessment

- It is inter twined with the development of anaesthesia itself, from casual practice before the mid 19$^{th}$ century

- The systemic assessment of patient to identify risks before anaesthesia began to take shape in late 19$^{th}$ and 20$^{th}$ century, formalized through the efforts of ASA

# Goals

- Evaluation of the patient
- Anticipation of possible peri-operative risks
- Minimizing risks by tailored individualized care plan

# Objectives

- Core of pre-assessment is to gather relevant medical information about the patient
- Educating the patient about the process
- Set out an anaesthetic plan
- Active participation and informed written consent of the patient

# Pre-anaesthetic check up process

| Who | When | Where |
| --- | --- | --- |
| Anaesthesiologist | At least 24 hours prior to the surgery | 1. If movable-pre anesthetic visit room<br>2.If not movable-in ward |

# Steps of pre-anaesthetic visit

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| History and Clinical examination | Investigation | Risk assessment | Pre-operative medication | Planning for anaesthetic technique |

# History taking

**Identification of the patient**

- Name
- Age
- Sex
- Weight
- Height
- Diagnosis
- Plan of operation
- Proposed mode of anaesthesia

# Cont

**History of co-morbidities:**

- Diabetes Mellitus
- Hypertension
- COPD/Bronchial asthma
- Ischemic heart disease
- Thyroid dysfunction
- CKD & CLD
- Obesity related problem

# Cont

**Personal history**

- Smoking
- Alcohol
- Drug abuse

**Family history**

# cont

**Previous surgical and anesthetic history**

- Mode of anaesthesia
- Allergy from drug
- Difficult intubation
- Post-operative complications

# Examination

**1.General examination**

-Appearance

-Pulse

-$SpO_2$

-Respiratory rate

-Pallor

-Oedema

-Nutritional status

- Blood pressure

- Temperature

-Cyanosis

-Dehydration

-Clubbing

# cont

**Systemic examination**

- Respiratory system
- Cardiovascular system
- Nervous system

**Local examination**

- Spine deformity
- Nasal obstruction
- Teeth

# Investigation

**Basic Investigation:**

- CBC
- Blood grouping
- RBS
- S.creatinine
- S.electrolyte
- Chest X-ray
- ECG

**Others:**

ECHO

HBsAg

HbA1c

Thyroid function test

Liver function test

PT/INR

BT,CT

# Risk Assessment

- ASA classification
- Air way assessment
- Cardiovascular Risk assessment

# ASA Classification

| ASA classifiation | Description of patient | 48hour mortality(%) |
|---|---|---|
| ASA 1 | A normal healthy person | 0.001 |
| ASA 2 | A patient with mild systemic disease | 0.002 |
| ASA 3 | A patient with severe systemic disease | 0.028 |
| ASA 4 | A patient with sever systemic disease, that's constant threat to life | 0.304 |
| ASA 5 | A moribund patient who is not expected to survive without the operation | 6.232 |
| ASA 6 | A declared brain dead patient, whose organs are being remove for donor purposes | |
| E | Denotes Emergency surgery | |

# Airway assessment

## LEMON SCORING

L=Look(facial trauma, large incisior, Large tongue,beard or moustache )

E=Evaluate the 3-3-2 rules

Incisor distance <3 finger breadths

Hyoid-mental distance <3 finger breadths

Thyroid to mouth distance <2 fingure breadths

M=Mallampati classification

O=Obstruction(epiglottitis, peritonsilar abscess, trauma)

N=Neck mobility

## The Mallampati Score

Class 1 Class 2 Class 3 Class 4

# Cardiovascular Risk assessment

**Modified NYHA functional classification**

- Class 1:asymptomatic(except during severe exertion)
- Class 2:symptomatic with moderate activity
- Class 3:symptomatic with minimal activity
- Class 4:symptomatic at rest

# ASA fasting guideline

| Types of food and drink | Time prior to surgery |
|---|---|
| Clear fluid: Water,Fruit Juice without pulp, Carbonated beverages, Black Tea/Coffee | 2 hours |
| Breast Milk | 4 hours |
| Formula Milk | 6 hours |
| Light Foods: Fruits, Fruits Juice with pulp, Vegetables | 6 hours |
| Heavy meal: Fatty meals, Meats | 8 hours |

# Medication adjusment

- **Anti-hypertensive drug:**

-All anti-hypertensive drug should be continued till the day of surgery except:

- ACEIs(ramipril, enalapril)
- ARBs(losartan, valsartan)

these should be omitted 24hours before surgery

**Anti thyroid drug:**

-Continue till the day of surgery

**Anti psychotic drug**:

-Continue except  SSRI, clozapine

**Oral contraceptive drug:**

-4weeks before operation

# Adjustment of anti-platelet drugs

| Drugs | Discontinue prior to surgery |
|---|---|
| Clopidogrel | 5-10 days |
| Ticlopidine | 14 days |
| Ticagrelor | 3-5 days |
| Dipyridamole | 24 hours |
| Abciximab | 48 hours |

Low dose aspirin(75mg) can be continued till the day of surgery

# Cont

- Before omitting dual anti-platelet therapy in patients with cardiovascular event or stroke within 6 months, consulting primary physician(cardiologist/specialist) is a must, particularly if drug-eluting coronary artery stents are inserted
- Consideration to delay the surgery if feasible rather than disruption of therapy

# Adjustment of anti-coagulant

- The patients who are at higher risk of thrombotic events require transition from long acting oral to alternative short acting agents(Bridging anticoagulation)
- Who are at lower risk may be able to omit anticoagulants without replacement
- Warfarin requires omission for 5 days pre-operatively with INR check 48 hours before surgery and injectable vitamin K if needed

# Cont

- The last therapeutic dose of LMWH should be given 12 hours preoperatively and start again 12 hours later postoperatively
- Direct oral anticoagulants (e.g. Rivaroxaban, Apixaban)require omission 2-4 days preoperatively

# Anti diabetic drugs

**Oral anti diabetic drugs**

1.Biguanides(metformin):continue

2.Sulfonylureas(glibenclamide,gliclazide):morning dose omit on the day of surgery

3.Meglitinides(Repaglinide):omit on the day of surgery

4.Thiazolidinediones(pioglitazone):omit on the day of surgery

5.SGLT2 inhibitors(empagliflozin):stops 24 hours before surgery

# cont

## Insulin

1. Short acting(lispro, aspart):omit morning dose
2. Intermediate acting(NPH, lente):reduction of the usual morning dose
3. Long acting insulin(glargine, detemir):reduction of the usual morning dose

# Steroid adjustment

- Minor surgery: continue normal dose, if needed hydrocortisone 25mg IV at induction
- Moderate surgery: Hydrocortisone 50mg IV at induction+25mg IV every 8hourly for 24hours
- Major surgery: Hydrocortisone 100mg IV at induction + 50mg IV every 8hourly for 48-72 hours then tapper

# Antibiotic Prophylaxis

- Antibiotics must be administered within 1 hour prior to incision except :

  1.Vancomycin should be given 2 hours prior to incision

  2.When tourniquet is used, antibiotics should be administered prior to its inflation

- Cephalosporins cover both gram positive and gram negative organism
- Anaerobic and gram negative coverage for intestinal surgery

# Premedication

- For anxiolysis : benzodiazepines
- For reduction of secretions and attenuation of vagal reflexes : anticholinergic preparations
- For reduction of PONV : anti-emetics
- Pre-emptive analgesia : paracetamol, NSAIDs

GREEN LIFE MEDICAL COLLEGE AND HOSPITAL
DEPARTMENT OF ANAESTHESIOLOGY

**ANAESTHECIA RECORD**

Date :
Time :

Patient ID :

Patient Name..... Age:..... Sex: M/F.....

Cabin:..... Ward:..... Bed:.....Height..... .....cm Weight:.....Kg BSA.....

Preop. Diagnosis:..... Proposed Opn:.....

Co-Existing Disease: DM,HTN,COPD,BA,Others

Blood Group : .....

.....

Accepted for : GA/SA/EA

**Preoperative advice (for Anesthesiologist)**

1.....
2.....
3.....
4.....

**Pre-Operative Medications**

1.....
2.....
3.....
4.....

Assessed by:
Name:
Date of Assessment

PREOPERATIVE CONDITION OF PATIENT

Pulse:...../min
BP:.....mm.Hg
Heart:.....
Lungs:.....
Asthma: (+) (-)
Allergy: (+) (-)
Chest Pain (+) (-)
Teeth:

Hb:.....
FBS/RBS:.....
B.Urea:.....
S.Creatinine.....
S.Electrolytes: $Na^+$.....$K^+$.....Cl.....
Other

ASA Class: 1.2.3.4.5.E
Airway Assesment
Mallampathi Grading. 1 2 3 4
CXR
CT
MRI

ECG.....
ECHO.....
.....
Maintenance drugs
1.....
2.....
3.....

**PREOPERATIVE ADVICE FOR SURGICAL TEAM**

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# References


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- 4. Miller's Anesthesia 8th edition

# Take home message

- Pre-anaesthetic assessment is not a formality, it is a life saving step
- Goal is to reduce morbidity and mortality by identifying risk factors early
- Ultimately the safer the assessment, the safer the anaesthesia

# THANK YOU FOR your TIME