



Pre-Anesthesia Assessment and Preparation

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Abstract: *The aims of the study is to find out pre – anesthesia assessment and preparation. The result of the study shows that Pre-anesthesia is an important first step in a series of anesthesia procedures performed on patients who are planned to undergo surgery. The things that need to be done include history taking, physical examination, laboratory examination, and physical status classification. Preparations are made at the clinic or at home for outpatients, in the treatment room, in the Central Surgery Installation (IBS) room, and in the operating room. Pre-anesthesia physical status assessment is very important. Anesthesia is not differentiated based on the size of the surgery but consideration of the choice of anesthesia techniques that will be given to patients is very complex and comprehensive considering all types of anesthesia have risk factors for complications that can threaten the patient's life*

Keywords: *pre-anesthesia; assessment; preparation*

I. Introduction

Every health problem, generally caused by three factors that arise simultaneously, that are (1) the existence of other germs or disruptors, (2) the existence of an environment that allows the development of germs, and (3) the behavior of community not care about germs and the environment. Health and illness are largely determined by the human behavior. The behavior change problem is related to the effort of Health Promotion. Health Promotion is regulated in the Ministry of Health Regulation No. 1114 / Menkes / SK / VII / 2005 about Guidelines for Implementing Health Promotion in the Regions. Health Promotion is an effort to improve the ability of the community through learning from, by, for and with the community, so that they can help themselves, and develop activities that are community-based, in accordance with local socio-cultural conditions and supported by public health-minded policies. (maswita, 2020)

Anesthesia comes from the word "an" which means no while "anesthesia" means taste. The word anesthesia was first introduced by Oliver Wendell Holmes, which describes a temporary unconscious state, because the administration of drugs with the aim of relieving surgery pain. anesthesia and maintenance as well as the stage of recovery and post anesthesia care.

Pre anesthesia evaluation is the first step in a series of anesthetic actions performed on a patient. This evaluation aims to determine the physical status of preoperative patients, analyze the type of surgery, choose the type and technique of anesthesia, predict complications that may occur, prepare drugs and anesthesia tools. In elective surgery, pre-anesthesia evaluation is done a few days before surgery, then the day before surgery, then the morning before the patient is sent to the operating room and finally performed in the preparation room for a central surgical installation (IBS) to determine physical status. In emergency surgery, the evaluation is carried out in the emergency room (IRD) operating room preparation room, because the time available for evaluation is very limited, so information about the illness suffered is less accurate.

The physical status that needs to be considered in the pre-anesthesia evaluation starts with the problems of the experience of surgery and anesthesia that have been experienced and the physiological changes caused by the disease, both diseases that are planned for

surgery and other diseases that accompany it. The ability to tolerate the effects of anesthetic drugs is very dependent on normal respiration and circulation, hemostatic function of the liver, endocrine and central nervous system. Therefore to be able to know and assess all of the above, the American Society of Anesthesiologist (ASA) classifies the physical status of patients who will undergo surgical procedures. The purpose of this system is only to evaluate the severity of the patient's disease or physical condition before choosing anesthesia or before performing surgery.

Pre anesthesia evaluation of the patient's psychological status is no less important than his physical status. The patient's psychological readiness can be done by educating the patient and the patient's family about the anesthesia procedure that will be undertaken, anesthesia drugs that will be used before, during, and after surgery, side effects of anesthetic drugs given, and surgical procedures to be performed. A study conducted by Walker et al showed that pre-visit visits by anesthetists had a significant impact on psychological conditions, especially the anxiety level of patients who were going to undergo surgical procedures compared with the control group and patients who only read anesthesia procedures through booklets.

II. Discussion

2.1 Pre-Anesthesia Assessment

Pre-anesthesia assessment is the first step in a series of anesthesia procedures performed on patients who are planned to undergo surgery. The things that need to be done include history taking, physical examination, laboratory examination, and physical status classification. Various factors must be considered for administering anesthesia-analgesia to the patient, including age, sex, physical status, type of operation, operator skills and equipment used, skills and ability to carry out anesthesia, facilities, hospital status, and patient demand.

The purpose of the pre anesthesia evaluation is as follows:

- Know the preoperative patient's physical status
- Knowing and analyzing types of operations
- Choose the appropriate type / anesthesia technique
- Predict the possibility of a whistle that can occur during surgery or // post surgery
- Prepare drugs to cope with predicted complications

a. Anamnesis

Anemnesis still must start from the patient's identity. The identity of each patient must be complete and must be matched with the identity bracelet worn by the patient. Patients can also be asked again about the day and type of body parts to be operated on to ensure that the patient is not mistakenly identified. Things that need to be analyzed after identity are as follows

- Specific history related to the surgical disease is the part that will be performed a surgical action that may cause impaired organ function
- General history includes:
 - History of systemic illness suffered or ever suffered that could affect anesthesia or be influenced by anesthesia
 - A history of the use of drugs that might interact with anesthetics
 - History of previous operations / anesthesia and history of anesthetic complications. This history is very important to know if there are things that need special attention, such as allergies, nausea, vomiting, itching, or shortness of breath after surgery, so that we can design the next anesthetic better. In this history we have to be able to sort

out whether the patient has allergies or side effects from the anesthetic drug.

- Bad habits such as smoking, consuming alcohol, using illegal drugs (sedatives and narcotics). Smoking should be stopped 1-2 days in advance to eliminate nicotine which affects the cardiosirculation system. Smoking is also stopped for a few days to activate the work of respiratory cilia and 1-2 weeks to reduce sputum production. The habit of drinking alcohol must also be suspected of liver disease.
- History of allergy to drugs or other

b. Physical examination

The things that must be checked in conducting a pre-anesthesia physical examination are as follows:

- The things that must be checked in conducting a pre-anesthesia physical examination are as follows:
- Examination or assessment of consciousness status, breath frequency, blood pressure, pulse, body temperature, time and height to assess nutritional status / Body Mass Index (BMI)
- Examination of psychological states such as anxiety, fear, pain
- Examination of the condition of the teeth such as the presence of dentures, wobbly teeth, protruding teeth, examination of mouth opening and tongue assessment. This check can be done by calculating the Mallampati score described in the figure below. These things are important to know whether it will complicate laryngoscopy intubation. Short and stiff necks can also complicate laryngoscopy intubation.
- General physical examination is carried out systematically for all organ systems of the patient's body by conducting inspection, palpation, percussion and auscultation.

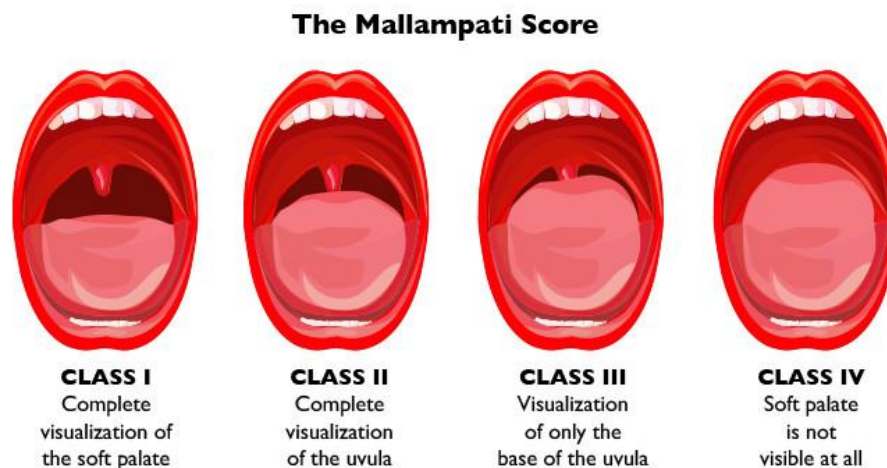


Figure 1

c. Supporting Examinations

Supporting examinations carried out are as follows:

- Routine checks performed on patients who are prepared for small and medium surgery are blood tests including Hemoglobin, hematocrit, erythrocytes, leukocytes, platelets, bleeding period (Bleeding Time) and clotting period (Clotting Time)
- Special examinations are carried out for patients who are prepared for major operations and in patients suffering from certain systemic diseases with firm indications. The things that should be examined in this patient are as follows:

- Complete laboratory tests: liver function, kidney function, blood gas analysis, electrolytes, hematocrit, hematology and physiological hemostasis, as indicated.
- Radiological examination: chest radiograph and other examinations as indicated
- Cardiology evaluation (ECG) especially for patients > 35 years old
- Spirometry examination in patients with COPD

d. Consultation and correction of abnormal organ function

- If chronic or acute organ function is found to be impaired, which can interfere with smoothness or is aggravated by anesthesia and surgery, consultations with relevant experts
- Correction to malfunctioning of preoperative organ systems:
 - In elective cases the correction is carried out by functional medical staff who handle patients. If deemed necessary, the surgery plan can be postponed while waiting for the improvement of organ function.
 - In emergency cases the correction is carried out together in the emergency room resuscitation room or in the operating room according to the medical emergency suffered by the patient.

e. Determination of the prognosis of perioperative patients

This determination is the final step based on the results of preoperative evaluations that have been carried out using the classification of the patient's physical status. The classification commonly used to assess a patient's physical status is derived from the American Society of Anesthesiologists (ASA). This physical calcification is not an estimate of the risk of anesthesia alone, because the side effects of anesthesia cannot be separated from the side effects of surgery.

2.2 Physical Status Classification

In 1940-1941, the American Society of Anesthesiologist (ASA) requested a committee of three doctors to study, research, experiment and design a collection system to classify surgical risks for patients. However, they argue that a person's risk is not the same as the others depending on the condition of the patient before undergoing surgery and it would be better to classify the patient class in terms of physical status alone. The first four points, namely ASA 1-4, were first published in 1963. In 2014, ASA revised the system by adding a sixth class that was used for organ donation purposes.

ASA Classification	Definition	Example
ASA I	Healthy patient	Healthy, do not smoke, do not consume or consume minimal alcohol
ASA II	Patients with mild systemic disorders	Mild systemic disorders, without limitation of functional activity. Examples include (but are not limited to): uncontrolled DM or hypertension, COPD, obesity (30 <BMI <40), well-controlled DM / Hypertension

ASA III	Patients with severe systemic disorders	Severe systemic disorders, with functional limitations. One or more moderate / moderate to severe illnesses. Examples include (but are not limited to): uncontrolled DM or hypertension, COPD, obesity (BMI> 40), active hepatitis, alcohol dependence, pacemaker implants, ejection fraction reduction, End Stage Renal Disease (ESRD) undergoing hemodialysis regular, PCA premature babies <60 weeks, history (> 3 months) of MI, CVA, TIA, CAD
ASA IV	A patient with a severe, life-threatening systemic disease	Examples include (but are not limited to): <3 months MI, ongoing cardiac ischemia or severe valve dysfunction, severe reduction in ejection fraction, sepsis, DIC, ESRD who do not undergo regular dialysis.
ASA V	Severely ill patients who are unlikely to survive without surgery	The possibility of not surviving> 24 hours without surgery, the possibility of death in the near future (multiorgan failure, sepsis with an unstable hemodynamic state, hypothermia, uncontrolled coagulopathy)
ASA VI	Patients with brain dead whose organs will be taken for donation	

2.3. Pre-Anesthesia Preparation

a. Preparation at the clinic and at home

This preparation is done for outpatients. The preparations made are as follows:

- Psychological preparation: give an explanation to the patient and or his family in order to

understand the anesthesia and surgery plan so that the patient and family are expected to be calm.

• **Physical preparation:**

- Stop habits such as smoking, drinking, and certain drugs at least 2 weeks before anesthesia or at least starting from the first evaluation at the clinic
- Take off the prosthesis or accessories and don't use cosmetics
- Fasting with the following rules:

Age	Solid food / formula milk / breast milk	Clear liquid without particles
< 6 month	4 hours	2 hours
6-36 month	6 hours	3 hours
>36 month	8 hours	3 hours

- It is required that the patient invites the family / relatives to accompany / wait during the surgery process and when returning home to anticipate the possibility of unwanted complications
- Make a letter of approval of medical action

b. Preparation in the treatment room

Preparations that can be made in the treatment room are as follows

- Psychological preparation in the form of an explanation to the patient and or his family, administration of sedative drugs to the patient if excessive anxiety / uncooperative patient
- Physical preparations that can be done are:
 - Stop smoking, drinking, and certain drugs
 - Remove the prosthesis or accessories, do not use cosmetics
 - Fasting according to the rules
 - The patient is bathed in the morning leading to the operating room
 - Make a medical approval letter
 - Other preparations that are specifically pre-anesthesia. If deemed necessary, corrections can be made to systemic abnormalities encountered during the evaluation of preoperative procedures such as transfusion, dialysis, and others according to the management of each patient suffered.

c. Preparation in the central surgical installation preparation room

- Re-evaluate the patient's current status and patient's medical records and other equipment
- Consultation on the spot if needed
- Change clothes with special clothes operating room
- Provision of premedication
- Other actions such as infusion

d. Preparation in the operating room

- Operating tables and instruments required
- Anesthesia machine and gas flow system
- Resuscitation devices and resuscitation drugs

- Anesthetic medicines needed
- Blood pressure monitoring devices, body temperature, ECG, pulse oxymeter
- Anesthesia medical record card
- Special warm blankets for babies and parents

e. Preparation of complications that will occur

- **Cardiovascular Disease**

Oxygen therapy and ECG monitoring must be continued until postoperatively. Anesthetic substances make the heart sensitive to the workings of catecholamines that are released. Furthermore, hemodynamic setbacks can occur and arrhythmias, tachycardioventricular to ventricular fibrillation occur. In patients with heart failure, organ perfusion becomes worse resulting in gas uptake and can occur arrhythmias, tachycardioventricular to ventricular fibrillation. obstruction of steam is blocked. In hypertensive patients, antihypertensive therapy must be continued throughout the operation. The danger of reverse hypertension with the risk of cardiovascular disorders after stopping the drug is far more severe than the risk of continuing therapy.

- **Breathing Disease**

Respiratory and lung diseases affect oxygenation, elimination of carbon dioxide, uptake of inhalation gases and increase the incidence of postoperative infections. Severe life-threatening bronchospasm sometimes occurs in asthmatic patients or nicotine addicts. Delays elective surgery in patients suffering from upper respiratory infections due to severe life-threatening infections. sedative and atropine drugs, and decreased immunological responses that occur because of general anesthesia can increase the risk of postoperative chest infections.

- **Diabetes mellitus**

Almost all anesthetic drugs are to increase blood glucose. Unstable diabetics should not be anesthetized for elective surgery, unless the surgical condition itself is the cause of the instability.

- **Heart Disease**

Metabolism of anesthetic drugs will be disrupted due to liver failure. Analgesic and sedative drugs also have a long working period because the brain's metabolism also changes due to liver disease. Anesthesia in jaundice patients has two real risks. First is bleeding due to lack of prothrombin. The second risk is kidney failure due to bilirubin which accumulates in the renal tubules.

III. Conclusion

Pre-anesthesia is an important first step in a series of anesthesia procedures performed on patients who are planned to undergo surgery. The things that need to be done include history taking, physical examination, laboratory examination, and physical status classification. Preparations are made at the clinic or at home for outpatients, in the treatment room, in the Central Surgery Installation (IBS) room, and in the operating room. Pre-anesthesia physical status assessment is very important. Anesthesia is not differentiated based on the size of the surgery but consideration of the choice of anesthesia techniques that will be given to patients is very complex and comprehensive considering all types of anesthesia have risk factors for complications that can threaten the patient's life

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