

Monitored Anaesthetic Care (MAC) is provided by anaesthesiologists for certain procedures performed under local anaesthesia or sedation. This procedure can be a minor surgery, endoscopic procedure, or radiological investigation.

What are the components of MAC performed by the Anaesthesiologist ?

1. Assess the patient and decide on the type of sedation or monitoring suitable to the patient, and then explain to the patient the anaesthetic plan and the associated risks.
2. Give instructions on preparation before the procedure, including an adequate fasting time, which is the same as for general anaesthesia (GA), normally for 6 hours before the procedure.
3. Monitor patient's condition during the procedure, including breathing, circulation and oxygen level.
4. Administer sedative drugs to the patient as required
5. Take any other appropriate actions to ensure the safety and comfort of the patient during the procedure. This may include conversion to GA (please also refer to information sheet on general anaesthesia).
6. After the procedure, patient will be transferred to an area for recovery from the effects of anaesthesia, monitored by nursing staff or the anaesthesiologist as appropriate.

What drugs are commonly given to the patient by the anaesthesiologist during MAC ?

1. Sedative Drug (similar to drugs used for GA, in reduced dosage): often given to alleviate the anxiety of the patient and sometimes to induce sedation, which is a state of depressed consciousness. The anaesthesiologist will decide on the level of sedation, from light to deep, suitable to the patient and the procedure. Very deep sedation will cause depression of protective reflexes and is very similar to GA.
2. Pain Killers: sometimes in combination with local anaesthetic injection to the area of surgery by the surgeon.

What are the risks and complications of MAC ?

The risk of any anaesthesia varies with procedure and between patients. The anaesthetist will discuss with the patient the relevant risks. Minor complications include pain or swelling over drug injection sites, feeling dizzy and tired, nausea or vomiting. Severe complications are rare but can include:

1. Obtunded protective reflexes in case of deeper sedation, for example, protective coughing to expel secretions or vomitus. If there is residual food in the stomach due to inadequate fasting time, the stomach contents could be vomited out and flow into the lungs, causing aspiration pneumonia.
2. Depressed breathing by sedative drugs, leading to airway obstruction due to relaxation of surrounding muscles. This could result in breathing difficulties and inadequate intake of oxygen.
3. Depressed circulatory system by sedative drugs, resulting in low blood pressure and unstable heart rate. This could lead to inadequate blood supply to heart or brain causing heart attack or stroke.
4. The sedative effect may last longer than expected and make the patient feel sleepy even after the procedure is finished.
5. Allergic reaction (rare) to any of the drugs used during the procedure. This may cause itchy skin rash, low blood pressure, and sometimes breathing difficulties.

Sometimes, a **change of the sedation plan** is necessary to ensure the safety and comfort of the patient. For example, the anaesthesiologist may decide to change to GA if the level of sedation is deemed inadequate for the surgery; or change to a lighter sedation level or even completely awake, when some patients cannot tolerate deeper sedation due to unstable circulation or inadequate breathing.

What preparation is necessary before MAC ?

Fast from food and drinks for at least 6 hours before the procedure, or as instructed by the medical staff.

When will a patient be able to go home after MAC ?

1. Stable blood pressure, heart rate and oxygen level.
2. Fully awake and oriented.
3. Able to eat and drink with no nausea and vomiting.
4. Fully ambulant.
5. Pain and nausea well controlled.
6. Able to pass urine after the procedure (especially for urological surgery).
7. A responsible adult will escort him/her home.

The patient should be warned not to drive or operate machinery or sign legal documents for at least 24 hours. The patient should be informed of the time and date of any follow-up appointments.

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor. Evangel Hospital reserves the right to amend this leaflet without prior notice. We welcome suggestions or enquiries on the information provided in this leaflet. Please contact our Healthcare professionals so that we could follow up and make improvement.

References

National Library of Medicine: "Monitored anesthesia care: An overview" (2015)
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4353148/> (02-08-2023)