



MONITORING OF icu patients

اسس العناية المركزة الكورس الاول المحاضرة الثانية

Sawa University

College of health and medical techniques

Department of Anesthesia

.....3rd stage.....

جامعة ساوة الاهلية

كلية التقنيات الصحية والطبية

قسم تقنيات التخدير

.....المرحلة 3.....

..محاضرة رقم 2.....

Lecture No. 2.....

الجانب العملي

Practical

استاذ المادة : د. نور عماد موسى
..... اختصاص تخدير وعناية مركزة

HEMODYNAMIC AND CARNIAL MONITORING

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- In critical care, the monitoring is essential to the daily care of ICU patients, as the optimization of patient's hemodynamic, ventilation, temperature, nutrition, and metabolism is the key to improve patients' survival
- **HEMODYNAMIC MONITORING** IS : the main stay in the care of critically ill patients
- Involve :
 1. Invasive monitoring
 2. Non invasive monitoring
- To provide info about pump effectiveness , vascular capacity , blood volume and tissue perfusion .

non invasive monitoring :

These may all parameters be displayed on a single monitor screen.

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1. Temperature :Temperature is continuously monitored by means of an oesophageal or rectal probe. This determines core temperature, which is usually at least 1°C higher than axillary temperature
2. Heart rate :Heart rate is measured from the electrocardiogram (ECG) trace Artefacts are common. Interference (usually from patient movement or a warming blanket) may confuse the monitor into showing the presence of a tachycardia or arrhythmia, while small complexes may be interpreted as asystole. Physiotherapy may also cause movement artefacts.

non invasive monitoring :

These may all parameters be displayed on a single monitor screen.

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□ 3. **Respiratory rate**

- Respiratory rate may be measured by making use of the changing impedance across the chest wall as it moves with respiration. In systems which offer this parameter, the sensors are built into the ECG leads.

□ 4. **Blood pressure**

- Blood pressure is monitored with a pressure cuff around the upper arm. An oscillometric method is used to measure blood pressure, with automatic cuff inflation and deflation

□ 5. **Oxygen saturation**

- Oxygen saturation is continuously measured by a pulse oximeter with a probe on a finger or ear lobe.
- Hypoxaemia has been shown to occur both during and after chest physiotherapy ; awareness and careful monitoring are therefore important

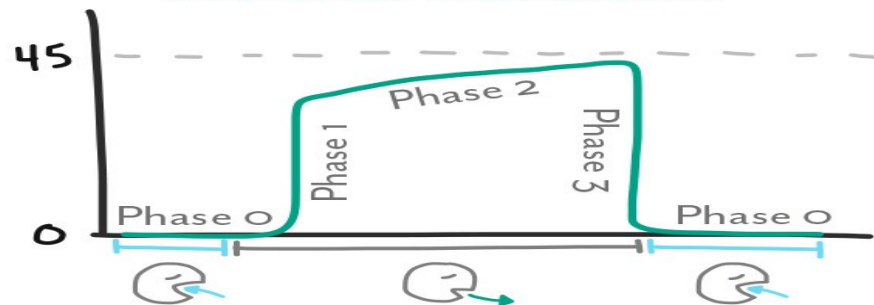
6. Capnography :

Continuous measurement of patient inhaled and exhaled CO₂ Waveform display more information than the value

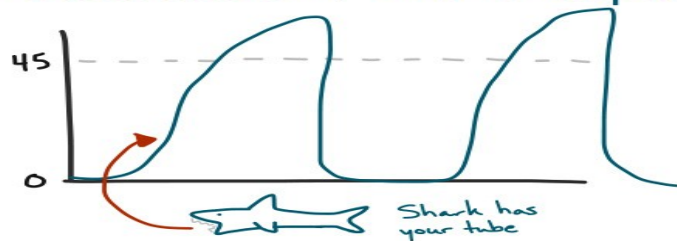
5

Waveform Capnography

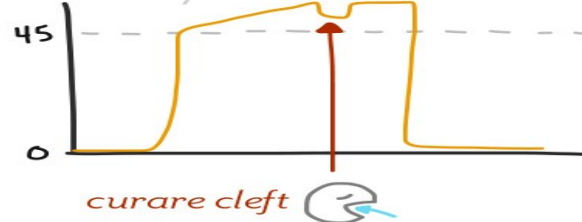
Normal waveform



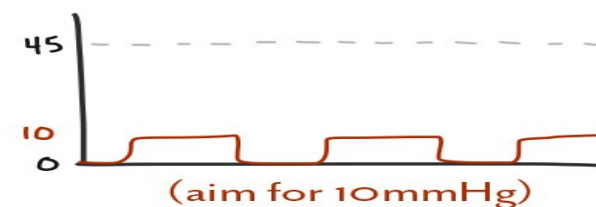
Obstruction / Bronchospasm



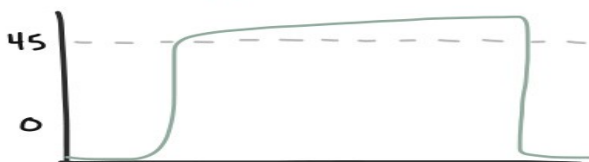
Asynchronous breathing
sketchymedicine.com



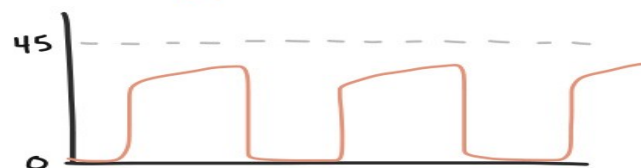
CPR



Hypoventilation



Hyperventilation

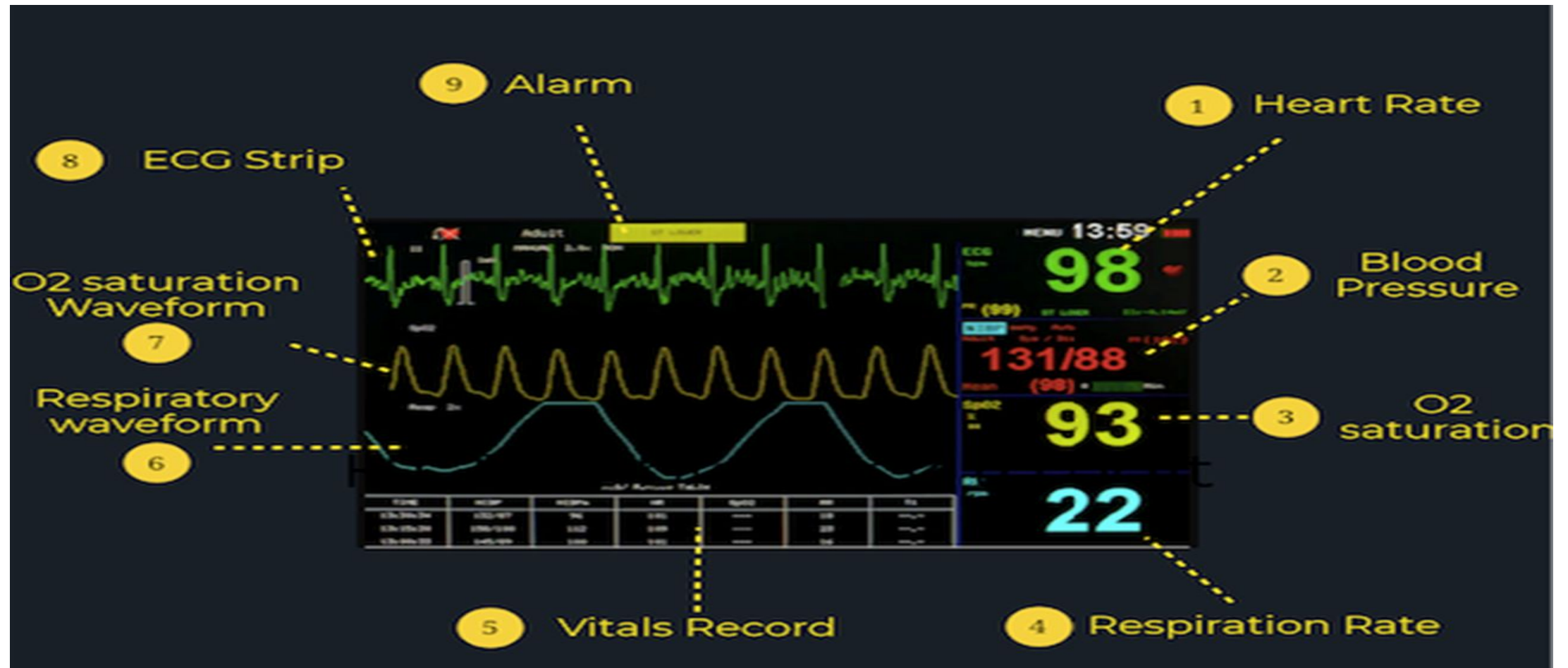


Sudden loss of waveform
(BAD!)



Monitor screen :

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INVASIVE MONITORING

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1. INTRA ARTERIAL BP
2. CVP
3. PUL. ART. PRESSURE
4. Mixed venous O₂ saturation

Monitoring of CNS

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1. **NON INVASIVE :Clinical monitoring GCS , EEG**
2. **(Invasive)INTRA cranial pressure monitoring :**
 - Intracranial pressure monitoring may be performed in patients with head injuries, brain surgery, intracranial and subarachnoid haemorrhage, and cerebral oedema from other causes.

Monitoring of CNS

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- The importance of ICP measurement is that it provides an estimate of cerebral perfusion pressure (cerebral perfusion pressure = mean arterial pressure — ICP) which in turn relates to cerebral blood flow
normal value less than 10 mmhg
if more than 20 – 25 mmhg need immediate correction.

Monitoring of CNS

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- TREATMENT OF RIASED ICP :
 1. HEAD ELEVATION
 2. O2
 3. MANNITOL AND HYPERTONIC SALINE
 4. SEDATION : PROPOFOL and medazolam
 5. Surgery .

Any questions?

*Thank
You*