

CPAP and BiPAP

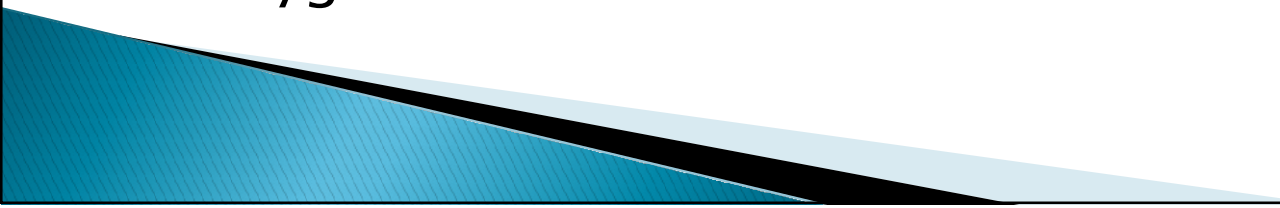
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CPAP and BiPAP

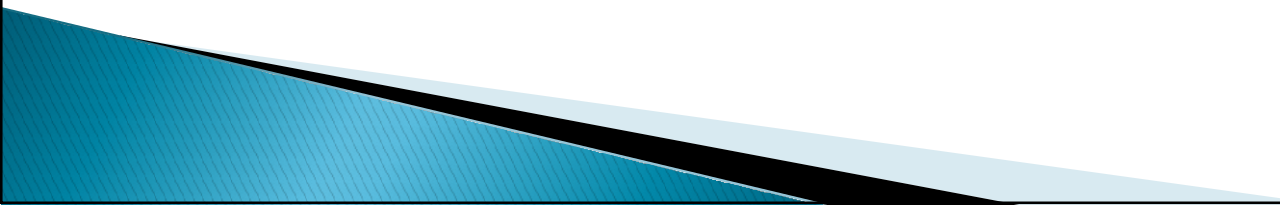
▶ Continuous Positive Airway Pressure

- ▶ Provides a constant pressure throughout the breathing cycle
- ▶ Prevents alveoli from collapsing
- ▶ CPAP is usually between 5 to 20.

▶ Bilevel Positive Airway Pressure

- ▶ Provides IPAP for assistance during inspiration and
 - ▶ EPAP for keeping alveoli open.
 - ▶ IPAP improves the gas exchange while EPAP improves oxygenation.
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Equipments


1. BiPAP machine
 2. BiPAP disposable circuit
 3. Low resistance bacterial filter
 4. BiPAP Total Face Mask, Full Face Mask or Nasal Mask plus head strap.
 5. Disposable Humidifier
 6. Distilled water
 7. Duoderm for skin protection
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NIV Mask

- ▶ Flow : 20 – 40 L/min
- ▶ Fio2 : Up to 100%
- ▶ Claustrophobia
- ▶ Pressure sore
- ▶ Bipap or Ventilator



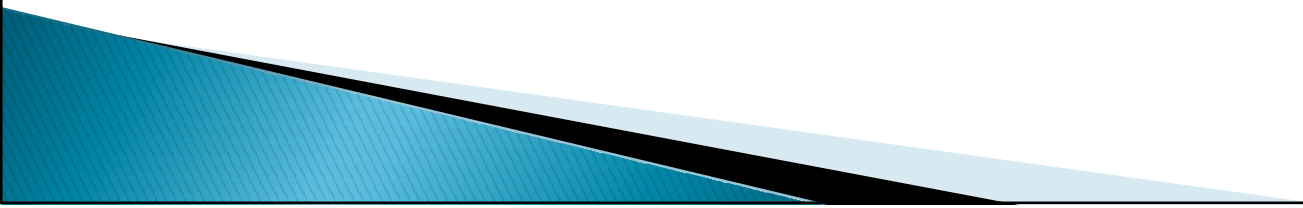
Modes of BPAP

- S (Spontaneous) – device triggers IPAP when flow sensors detect spontaneous inspiratory effort and then cycles back to EPAP
 - T (Timed) – IPAP/EPAP cycling is purely machine triggered, at a set rate, typically expressed in breaths per minute
 - S/T (Spontaneous/Timed) – Like spontaneous mode, the device triggers to IPAP on patient inspiratory effort. But in spontaneous/timed mode a "backup" rate is also set to ensure that patients still receive a minimum number of breaths per minute if they fail to breathe spontaneously.
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Initial settings

- BPAP is often initiated with
Expiratory PAP (EPAP) of 5 cm H₂O and
Inspiratory PAP (IPAP) of 8 to 10 cm H₂O.
- These pressures can be titrated up depending upon clinical and physiologic response and patient comfort
- Final IPAP pressures of 15 to 22 cm H₂O are common

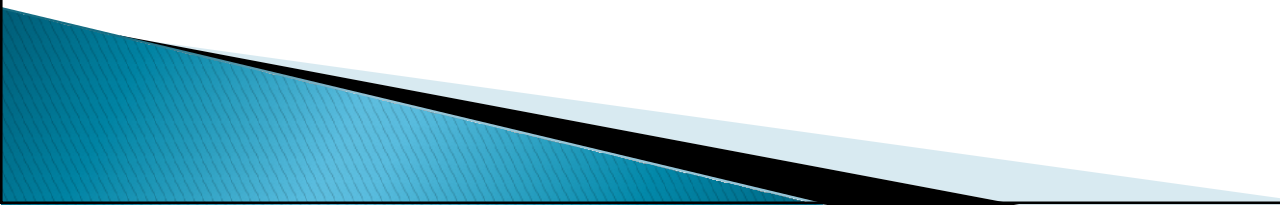
PROCEDURE

- ▶ Explain whole procedure to the patient.
 - ▶ Assemble and prepare the equipment.
 - ▶ Arrange adequate oxygen supply.
 - ▶ Place the patient in position with head end raised.
 - ▶ Check SpO₂.
 - ▶ Apply NIVmask on patients face tightly and tie all the straps properly.
 - ▶ Set IPAP and EPAP in BiPAP mode and only EPAP in CPAP mode with rotatory dial.
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- ▶ Explain and train the patient ,how to breath .
- ▶ Monitor
 - ▶ Circuits for any leak.
 - ▶ Face mask fitting.
 - ▶ Respiratory response.
 - ▶ Monitor vitals regularly.
 - ▶ Monitor for gastric distension and sores on face.

Assessment of effectiveness

Improvement in:

1. Respiratory rate and heart rate
 2. Dyspnea
 3. Oxygen requirement
 4. Hypercarbia
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THANKS