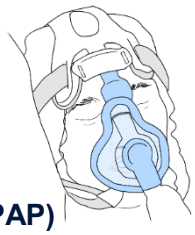
Non-ICU Provider Guidance

Noninvasive Positive Pressure Ventilation

COVID-19

AVOID Use of AVP MODES.

Caution Advised: ARDS, Pneumonia, PUI/COVID-19 – monitor closely for need for intubation



INSPIRATORY PRESSURE (IPAP)

Start 8-12 cm H2O

Maximum 20-25 cm H2O

IPAP >20 cm H2O risks gastric distention with aspiration risk and decreased diaphragmatic

EXPIRATORY PRESSURE (EPAP)

Start EPAP 4-6 cm H2O

Maximum 10-15 cm H2O

Both IPAP and EPAP must be increased the same amount to maintain the same Tidal Volume. Increase both inspiratory pressure (IPAP) AND expiratory pressure (EPAP) in increments of 2 cm H2O excursion

Persistent Hypercapnea

1. Increase inspiratory pressure (IPAP) in 2 cm H2O increments (to a maximum of 20-25 cm H2O)
2. Keep expiratory pressure (EPAP) unchanged while increasing IPAP to increase Tidal Volume (improve ventilation)

   The difference in IPAP to EPAP is called pressure support; this value determines your tidal volume (bigger gap, bigger volume)
3. Titrate Tidal Volumes to a maximum of 6-8 ml/kg

   Predict required new minute ventilation

   (MV = Tidal Volume * Respiratory Rate)

   (PaCO2_now / PaCO2_goal) * MVcurrent = MVnew

Example

PaCo2 is 70, PaC02 goal is 45, current MV is 6.

(70/45)*6=9.3 MVnew

Persistent Hypoxia

If you are on 60% FiO2 or greater and still not oxygenating, increase your EPAP.

Titrating Oxygen - Wean FiO2 before decreasing pressures. Titrate down to the lowest level to maintain Oxygen Saturation >91% (or other patient-specific parameters)

Inspiratory to Expiratory Time (I:E) COPD Set Inspiratory to Expiratory Time (I:E) low for a shorter inspiratory time, allowing for adequate expiration

Respiratory Rate (back-up) Start at 6 breaths/minute. Respiratory Rate may be increased above the patient's inherent rate in a somnolent patient. Higher RR is unlikely to be tolerated in the alert patient

Tidal Volume is related to the difference between inspiratory (IPAP) and expiratory (EPAP) pressures.

The difference in IPAP and EPAP is also described as **pressure support (PS), the PS drives tidal volume**.

Tidal Volume should be 6/8 ml/kg per ideal body weight. **Pressure support should always be > 5cm H2O but <10 cm H2O**.

Example IPAP 10 and EPAP 5 = 5cm H2O this is appropriate. Example of IPAP 20 and EPAP 5 = 15 cm H2O, this is too high and not appropriate.

Ventilation: If the patient is not receiving adequate tidal volumes per ideal body weight, gradually increase IPAP above EPAP to increase tidal volume.