CPAP Titration

Audience: All personnel in the Sleep Disorder Center.

Purpose: A specific protocol for CPAP titration assures the consistency among technicians and improves the adequacy and reliability of the acquired data.

Policy: All patients will be oriented to positive airway pressure (PAP) prior to starting CPAP polysomnogram.

When fitting a patient for a mask and headgear, measuring tools and techniques should be used to ensure a proper fit. Patient discomfort may prevent the patient from being effectively treated; therefore, it is the night technologist’s responsibility to utilize all available mask, equipment, and counseling to aid in the patient’s compliance during the titration study. Additionally, the comfort and fit of the patient mask should be evaluated throughout the night.

If significant (as determined by effect on sleep quality) leak is present during the titration, the technician is responsible for repairing the leak as soon as possible and as frequently as necessary. Actions may include, but are not be limited to, the following:

- Adjusting mask
- Adding chinstrap
- Changing mask type

Patients should be encouraged to sleep in the supine position during the titration study. Sleeping in an inclined position should be strongly discouraged.

Minimum starting CPAP pressure: 4 cmH2O
Maximum CPAP pressure: 20 cmH2O

Obstructive Events:
CPAP should be increased in 1-2 cmH2O increments until obstructive respiratory components are eliminated. The patient will be monitored for a minimum of 5 minutes between incremental CPAP pressure adjustments for obstructive respiratory events.

- 1-2 cmH2O CPAP increase will be done with the presence of Obstructive Apneas
- 1-2 cmH2O CPAP increase will be done with the presence of Obstructive Hypopnea
- 1 cmH2O CPAP increase will be done with the presence of RERAs

Central Events:
- 1 cmH2O CPAP increase will be done with the presence of Central/Periodic Breathing Events.
• If central events worsen or do not improve after you increased pressure 3-4 cmH2O, return to pressure where obstructive component eliminated.
• If CPAP pressure increases were ineffective in treating centrals a trial of O2 or BiPAP can be considered if desaturations and/or arousals are present.

Desaturation with Respiratory Related Events:
• If desaturations > 4% are associated with centrals you can proceed to O2 initiation and titration procedure
  OR
• If arousals and/or desaturations > 4% are associated with centrals you can initiate a trial of BiPAP if deemed appropriate. (BiPAP titration procedure)
• The patient will be monitored for a minimum of 20 minutes between incremental CPAP pressure adjustments for a central component.

Desaturation in the absence of Respiratory Related Events:
• 1cmH2O CPAP increases will be done with the presence of a sustained SaO2<87% for a period ≥ 2 minutes in the absence of Apnea, Hypopnea and RERA.
• If SaO2 is not able to be maintained at >87% after increasing CPAP 2cmH2O return to pressure where Apnea, Hypopnea and RERA were eliminated and initiate O2.
• The patient will be monitored for a minimum of 20 minutes between incremental CPAP pressure adjustments for a SaO2 < 87%.

The titration model above is a guide and does not include all scenarios that will be encountered in the sleep laboratory during a titration. If you have questions during a titration contact the Medical Director or his designee or Denise McElyea, Program Manager.

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If SaO2 Sustained <70% for > 2minute during a titration procedure initiate O2 Administration procedure and as appropriate titrate pressures down as adjustments are made (see O2 Administration procedure).

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Shahzad Jokhio, M.D.  
Medical Director