CONGESTIVE HEART FAILURE AND SLEEP APNEA
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BACKGROUND (ref 1, 2 & 3)

Congestive heart failure is commonly associated with Sleep Apnea
Asymptomatic CHF up to 30% incidence of Sleep Apnea
Symptomatic CHF up to 50% incidence of Sleep Apnea
Patients with CHF often do not have classical symptoms of snoring, excessive weight or
daytime sleepiness. They often have orthopnea, paroxysmal nocturnal
dyspnea and witnessed apnea.
The mortality for CHF is significantly greater when Sleep Apnea is present.

CARDIAC EFFECTS OF SLEEP APNEA (ref 1, 2 & 4)

With upper airway obstruction - increased negative intra thoracic pressures causes:
increased LV after-load and decreased LV pre-load which combine to decrease
stroke volume
Intermittent hypoxia will increase pulmonary artery pressure and decrease cardiac
contractility
Sympathetic vasoconstrictors increase with apnea and they increase BP and increase
after-load

TYPES OF SLEEP APNEA SEEN IN CONGESTIVE HEART FAILURE (ref 1, 2 & 4)

Obstructive sleep apnea -
Central sleep apnea - Cheyne-Stokes
   Results from instability of respiratory control
   Components include: Hyperventilation, Prolonged circulation time and
   Reduced blood buffering capacity

EFFECTS OF TREATMENT (ref 5 & 6)

Obstructive sleep apnea - Significant improvement in cardiac function with nasal CPAP
Central Apnea - Cheyne-Stokes -
   Oxygen therapy
      Short term oxygen attenuates frequency and duration of Cheyne-Stokes
      respirations
      Cardiac function does not improve with six months of oxygen therapy
Continuous positive airway pressure (CPAP)
      Short term improvement in ventilation and oxygenation
      Cardiac function does improve with long term treatment

CONCLUSIONS

SLEEP APNEA IS A COMMON PROBLEM IN CONGESTIVE HEART FAILURE

TREATMENT OF OBSTRUCTIVE AND CENTRAL APNEA IMPROVES
CARDIAC FUNCTION  (Sept 2003)
REFERENCES

BACKGROUND, EFFECTS OF TREATMENT and TYPES OF SLEEP APNEA SEEN IN CONGESTIVE HEART FAILURE

4) Christian Guilleminault in Principles and Practices of Sleep Medicine. Edited by Kryger, Roth, and Dement pp 997-1011

EFFECTS OF TREATMENT