

# Apnea Surgery May Bring CRP Levels Down

BY SUSAN LONDON

SEATTLE — Surgery for obstructive sleep apnea may reduce patients' C-reactive protein levels even if the procedure doesn't cure their apnea, new study data show.

"Although it's controversial, there is certainly evidence that C-reactive protein [CRP] elevation is related to obstructive sleep apnea, with or without obesity," Dr. Michael Friedman said at the annual meeting of the Associated Professional Sleep Societies. "Evidence of the relationship to sleep apnea without obesity is the fact that many studies show that good continuous positive airway pressure [CPAP] compliance decreases CRP levels."

The investigators set out to determine first whether surgical treatment of obstructive sleep apnea (OSA) reduces CRP levels, explained Dr. Friedman, who is an

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otolaryngologist at the Rush University Medical Center in Chicago. "More important, because many of our patients treated with surgery are not cured, we sought to determine whether patients who are not cured also benefit by having a decrease in CRP level."

The investigators retrospectively reviewed the charts of all adult patients who underwent surgery for OSA at the medical center between 2004 and 2008, had a moderately elevated preoperative CRP level (greater than 0.1 mg/dL but less than 1.0 mg/dL), and had pre- and postoperative polysomnography data. All of the patients had tried and failed CPAP, Dr. Friedman noted.

The change in apnea-hypopnea index (AHI) before and after surgery was used to classify patients' OSA as cured (AHI reduced by greater than 50% and AHI score less than 20), substantially improved (AHI reduced by greater than 50% but AHI score greater than 20), improved (AHI reduced by 20%-50%), unchanged (AHI reduced by less than 20%), and worsened (AHI increased).

Results were based on 75 patients. Mean age was 47 years, and 79% of the patients were men. The surgical procedure was an uvulopalatopharyngoplasty in 51% of patients, and minimally invasive single-stage multilevel surgery in 49% of patients, according to Dr. Friedman.

All patients had three palatal pillar implants placed in the midline and, if their uvula measured greater than 1.5 cm, a partial uvulectomy. In addition, all patients had radiofrequency treatment of the tongue base.

A comparison of pre- and postoperative data in the population overall showed that surgery was associated with

a significant decrease in the AHI (from 48 to 30) and a significant increase in the minimum oxygen saturation during sleep (from 81% to 85%). Body mass index was unchanged.

According to the polysomnography criteria, OSA was cured in 24% of patients, substantially improved in 15%, improved in 24%, unchanged in 26%, and worsened in 11%. The AHI was significantly reduced from the preoperative

level in all of the groups except for the patients who had a worsening of their OSA, Dr. Friedman reported.

The CRP level fell significantly from the preoperative level in patients whose OSA met the criteria for cure (from 0.341 mg/dL to 0.122 mg/dL). CRP levels also declined in those patients whose OSA was substantially improved (from 0.520 mg/dL to 0.314 mg/dL) or improved (from 0.335 mg/dL to 0.151 mg/dL).

"In this study, surgery reduced CRP levels even in those patients where cure was not achieved," he concluded.

"The fact that elevated CRP relates to an increased risk of cardiovascular disease is clear," he commented. Therefore, by reducing levels of that inflammatory marker, surgery for OSA may ultimately lower patients' cardiovascular risk.

Dr. Friedman said he had no conflicts of interest in association with the study. ■



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