Death, MI Risk Tied to OSA Severity

BY ROBERT FINN
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SAN FRANCISCO — Obstructive sleep apnea is tied to a 30% increased risk of myocardial infarction or death even after adjustment for many cofactors, Dr. Neomi A. Shah said at the International Conference of the American Thoracic Society.

Moreover, the greater the severity of obstructive sleep apnea (OSA), the greater the risk of MI or death, said Dr. Shah of Yale University, New Haven, Conn.

The observational cohort study of 1,640 patients referred for polysomnography compared the 844 patients who didn't qualify for an OSA diagnosis with the 796 who did. The patients were followed for 5 years. The mean apnea-hypopnea index (AHI) of those with OSA was 47.8, compared with 5.1 in the controls.

After adjustment for cardiovascular risk factors and other confounders, OSA was associated with a 40% increased risk of myocardial infarction or death. There was also a dose-response relationship between OSA severity as judged by AHI and the adjusted risk of myocardial infarction or death.

Compared with patients in the lowest quartile (AHA 0-4), those in the highest quartile (AHA > 30) had a 90% increased risk of myocardial infarction or death. Those in the second quartile (AHA 5-14) had a 20% greater risk, and those in the third quartile (AHA 15-30), a 50% greater risk, a statistically significant trend. ■

Nocturnal Pulse Oximetry Cuts Costs in Apnea

BY ROBERT FINN
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SAN FRANCISCO — A diagnostic algorithm employing nocturnal pulse oximetry before referring children to polysomnography can greatly reduce the costs of diagnosing obstructive sleep apnea syndrome, according to a poster presentation by M. Kirstman, Dr. Robert T. Brouillette, and their colleagues at the International Conference of the American Thoracic Society.

The study involved a consecutive case series of 325 children, aged 1-18 years, who were referred to the sleep lab of the Montreal Children's Hospital/McGill University Health Centre for evaluation of possible obstructive sleep apnea syndrome (OSAS).

After converting all costs to U.S. dollars, the investigators determined it would have cost $220,000 to provide polysomnography for all of the children who were referred.

A nocturnal oximetry study costs $84, of which 40% is the physician's fee; a polysomnography study costs about $678, of which 57% is personnel costs.

By using nocturnal pulse oximetry as a way of limiting the number of patients who were referred to polysomnography, the actual cost of 325 oximetries and of 32 polysomnoraphies was $49,000, a savings of $171,000 (78%).

Previous studies had shown that nocturnal pulse oximetry has a 97% positive predictive value and a 47% negative predictive value for the diagnosis of OSAS in children (Pediatrics 2000;105:405-12).

On the basis of these findings, Dr. Brouillette and his colleagues developed the McGill OSAS Diagnostic Algorithm. According to this algorithm, oximetry and subsequent polysomnography are used only when the otolaryngologist is unsure whether adenotonsillectomy is required. Nocturnal oximetry is used as the first test, and if the results are positive the patient is referred for adenotonsillectomy without the need for polysomnography.

On the other hand, if the oximetry results are inconclusive the patient undergoes polysomnography unless the referring otolaryngologist intends to operate regardless of the polysomnography results.

According to the cost analysis, an individual nocturnal oximetry study costs $84, with the largest proportion of that, 40%, coming from the physician's consultation fee. An individual polysomnography study costs $678.19, 57% of which comes from personnel costs.

Only 10% of the patients in the McGill case series required polysomnography. The costs of the McGill diagnostic algorithm would have exceeded the costs of providing polysomnography for all only if 90% or more of the patients had required it. ■