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LUNG ALERT

CPAP for OSA is cost effective

▲ Ayas NT, FitzGerald JM, Fleetham JA, *et al*. Cost-effectiveness of continuous positive airway pressure therapy for moderate to severe obstructive sleep apnea/hypopnea. *Arch Intern Med* 2006;**166**:977–84

Untreated obstructive sleep apnoea/hypopnoea (OSAH) is known to be associated with daytime sleepiness, deteriorating health related quality of life (HRQL), hypertension to an individual sufferer, and reduction in daytime performance and an increased incidence of road traffic accidents (RTAs) which has a significant impact on society. Continuous positive airway pressure (CPAP) is known to be an effective treatment of OSAH, which improves symptoms and HRQL. Hitherto, a few studies have found CPAP also to be cost effective at an individual level by incorporating improvement in health status against cost of treatment. This study expands this to a cost benefit analysis by incorporating the benefits to society at large from evaluating the economic impact of a reduction in RTAs by CPAP provision.

Demographic data of driving adults aged 25–54 years newly diagnosed with moderate to severe OSAH were derived from the primary referral centre in British Columbia. The annual probability of an RTA, stratified by severity, was determined using data taken from the National Highway Traffic Safety Administration, as were direct and indirect costs of RTAs. A meta-analysis of eight studies incorporating over 1200 patients was performed to determine the impact of CPAP treatment on the rate of RTAs. The odds ratio was calculated to be 0.15. It was assumed that the RTA rate in treated OSAH was equivalent to that in the general population. The societal perspective of benefit from treatment of OSAH was derived by using the European quality of life questionnaire, which indirectly derives health state values from population surveys using the time-trade off technique. Costs were derived from the 2004 US Medicare fee schedule.

At an individual level, CPAP was found to be more effective but more costly than no CPAP with an incremental cost effectiveness ratio (ICER) of $3354 per quality adjusted life year gained (QALY). When the economic benefit to society of the reduction in RTAs was taken into account, the cost/QALY was reduced by 10-fold.

What this study adds is the significant reduction in cost benefit ratio using just one aspect of societal benefit from treating OSAH. The calculated ICER varies depending both on the measurement tool used and the perspective. The cost benefit analysis may improve further if the potential decrease in cardiovascular morbidity and mortality associated with untreated OSAH is included in the analysis.

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