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COMMENTARY

Quality of Life With PAP Therapy for Obese Children

Commentary on Katz et al. Long-term impact of sleep-disordered breathing on quality of life in children with obesity. *J Clin Sleep Med*. 2018;14(3):451–458.

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Among adults with obstructive sleep apnea (OSA), positive airway pressure (PAP) therapy improves quality of life (QOL).[1] Katz et al. report on the QOL of pediatric patients with both obesity and moderate/severe OSA, and the effect of PAP therapy on QOL, in a prospective cohort of 26 subjects ages 8 to 16 years from four centers in Canada.[2] The assessments of QOL were made near the time of initiation of PAP and after 12 months of prescribed use. QOL was assessed with the PedsQL—a validated instrument that has been used previously to study populations of children with chronic diseases. PedsQL was administered to the subjects and to their parents-proxies. There are standard cutoffs indicating impaired QOL for both the child scale (< 69.7) and the parent-proxy scale (< 65.4). This is the first study of the long-term effect of PAP on QOL in children and the first to address changes in QOL among children who are both obese and have OSA.

This paper is in many ways an exemplary template for how to do what the authors set out to do. Their methods and analyses are straightforward and clearly presented. They show that the mean total PedsQL for both the child and parent scores were less than the cutoff scores, indicating impaired QOL. For their cohort with OSA and obesity, all total and subscale scores from both children and parents were less than those for healthy, nonobese children reported elsewhere.[3] However, although the mean values for the child-reported PedsQL were lower in all categories except child-reported social functioning when compared to children with obesity[4] or OSA,[5] there were no statistically significant differences for the 26 children who have both obesity and OSA. It should also be pointed out that 6.6% of children with obesity alone were reported to have OSA.[4] Moreover, 76 and 74 children, respectively, in the 2 arms of the adenotonsillectomy trial used for the OSA alone comparison[5] were also reported to be obese (150 of 453 total OSA alone) (see Table 3 in Katz et al.[2]). Although only a minority of the obese comparison group had the diagnosis of OSA, and there was no effect on QOL of being obese in the OSA comparison group, both groups had some obese children with OSA.

Parents were significantly more likely to conclude that the QOL of their children with both obesity and OSA was less than children with obesity, primarily, or OSA with or without obesity. Furthermore, parents were likely ($P = .04$) to conclude that PAP therapy was followed by significant and clinically important improvement in children's QOL. Their children did not share this conclusion, however ($P = .94$, change in group mean total score only 0.22). These findings are reminiscent of the Childhood Adenotonsillectomy Trial where parents reported an improvement in PedsQL after adenotonsillectomy, but their children did not.[5]

There are obvious limitations regarding generalizability of their results due to the small sample size. QOL "was assessed as a secondary outcome of a larger study for which the primary outcome was change in insulin resistance after PAP therapy prescription."[6] Nevertheless, the authors recognize and address limitations in a clear and concise fashion. They acknowledged that parental reporting bias might have led parents to conclude that what they did "for their children" has given their children a better QOL. The authors also suggest that what may be important for parents in their children's QOL may or may not be important to a child. For example, parents may believe that signs of improved QOL included participation in concurrent interventions such as support groups or exercise classes, a perception that children may be less likely to share.

Recent reports show that approximately 14% of Canadian children are obese,[7] fewer than in the United States. But the number of obese children with OSA in Canada is likely 100,000 or more, and Katz et al. studied the QOL of only 26 children. Studies to assess the QOL benefits of PAP therapy among a group of obese children, who are less likely than nonobese children to be cured of OSA from adenotonsillectomy, should use this paper as a model and not be discouraged because of its small sample and equivocal results. Studies of PAP therapy in the United States, in particular, where covariates influencing QOL such as race and poverty may be more influential than in Canada, should focus on minority and impoverished children, among whom obesity is also more common.

CITATION

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DISCLOSURE STATEMENT

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