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Evaluation of Myofunctional Therapy for OSAS in children

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Introduction

Orofacial myofunctional therapy (OMT) improves oral facial muscles and corrects tongue positioning and spinal posture in children. It has been advocated as a treatment for obstructive sleep apnea syndrome (OSAS) in adults and children. Nevertheless, the evidence for its efficacy is limited especially in children.

Objectives

To investigate the effect of a structured 12-week OMT exercise program in quality of life amongst children with OSAS in Hong Kong.

Methodology

This is a retrospective study to evaluate the effectiveness of a 12-week OMT exercise program. All children with OSAS as defined by apnea-hypopnea >1 and presence of symptoms of OSAS were referred for myofunctional treatment. Children were excluded if they are younger than 6 years of age, moderate degree of mental retardation and neuromuscular diseases. Primary outcome measure is OSA-18. Secondary outcomes included changes in tongue strength, changes in scores of Nordic Orofacial Test-Screening (NOT-S), Sleep Related Breathing Disorder (SRBD) and changes in Modified Epworth Sleepiness Scales (mESS). All children had the tongue strength measured by the Iowa Oral Performance Instrument (IOPI). The 12-week OMT exercise program included exercises for the tongue, jaw, cheeks, lips and spine

Result

Twenty three children (median age: 12.9) completed the program. Significant improvements were found in the quality of life, i.e. OSA-18 score, improved from median of 52.5 to 38.5($p=0.001$); SRBD score decreased from 8.0 to 3.0 ($p=0.003$). Besides, all subjects showed significant improvement in tongue strength from 38.2kPa to 53.3kPa ($p=0.001$). Both scores of NOT-S and mESS improved from 4 to 1.0($p<0.001$) and from median (IQR) of 3.0 (2.0-7.0) to 3.0(1.0-4.0) ($p=0.008$) respectively. 70% of children were mouth breather on awake before the training but

prevalence decreased to 13% after the training. 39% of children had the problem of saliva drooling to 4% after the training. There were also moderate positive correlation between change of tongue strength and change of NOT-S screening score (0.44). A moderate negative correlation was also found between change of tongue strength and SRBD score(-0.40).

Conclusion: OMT exercise program offered significant improvement in the symptoms, quality of life of children with OSAS. The foresaid improvement is associated with the improvement of the tongue strength.