



Service Priorities and Programmes
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Physiotherapy in reducing sleep apnea of preterm infant with Non-invasive ventilation support (NIV) in Neonatal Intensive Care Unit (NICU) - by using Oro-facial Myofunctional Therapy (OMT) and Postural Care.

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Introduction

Around 70% of preterm infants with apnea have periods of airway obstruction. Tongue position may be a causative factor in obstructive sleep apnea. Preterm infants are born to have reduced muscle tone. Without proper positioning, the resting posture of preterm infants would have arched neck posture with mouth opened and tongue at a low position. Restoration of nasal breathing, elimination of mouth breathing and restoration of proper tongue position to alveolar ridge of hard palate with the usage of OMT were proposed to be an important approach to treat sleep disorder breathing in paediatric patients.

Objectives

This single case study was used to preliminary investigate the effect of OMT and postural care on the frequency of apnea and desaturation (A&D) of a preterm infant in NICU.

Methodology

A 27-week preterm infant was referred to physiotherapy (PT) for oral-motor training because of frequent apnea and desaturation at day-6 post-extubation (PE) from ventilator support and was weaned to NIV respiratory support. Assessment on respiratory condition including breathing pattern, posture of body including head and neck position, soft tissue tightness around oro-facial and neck regions, active movement of tongue and mouth, the condition on lip seal would be done. OMT and positioning care were given daily from day-6 NIV onwards. The outcomes on daily charted (A&D) frequency(done by nurses) and the pCO₂ level of blood gases results were extracted from the electronic documentation system by another physiotherapist. Data was collected for 10 days starting from Day 1 to 5 NIV (before starting PT), Day

6 to Day 10 NIV (after starting PT).

Result

The maximum frequency of charted (A&D) dropped from 5 to 1 times/day and the pCO₂ level dropped from 7.2 to 6.3 kPa from pre-PT to post-PT period. The respiratory pattern switched from mouth breathing pattern with tongue at a low position to nose breathing pattern with complete lip seal from pre-PT to post-PT period.