Service Priorities and Programmes

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Management of sialorrhoea for children with neurology problems

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Introduction

Sialorrhoea beyond the age of 4 years is abnormal and is common problem in children with neurological problems. Underlying risk factors include poor head control, constant open mouth posture, inadequate lip and tongue control, diminished intra-oral sensation and constant tongue thrusting activity. Anterior drooling results in skin excoriation, dehydration and odour, while posterior drooling leads to chronic aspiration pneumonia. Drooling also results in social isolation and embarrassment of the child as well as increased burden of care and psychosocial stress on caregivers. In view of the significant morbidities, the Paediatric Rehabilitation Unit (PRU) of Caritas Medical Centre (CMC) launched a Sialorrhoea Improvement Program in March 2017.

Objectives

To reduce frequency and severity of drooling by following means:

1. Improve oromotor control and behavioral modification
2. Reduce saliva production
    - Medications
    - Botulinum toxin A injection
    - Surgery

Methodology

The program accepts territory-wide referral from Hospital Authority, Department of Health and Education Bureau. Multidisciplinary assessment was performed to ascertain medical condition, functional status and oromotor difficulties of each child. Severity of drooling was rated by a 10-point visual analogue scale (VAS). Interventions included oromotor training, postural control training, application of hyoscine patch, botulinum toxin A injection and referral for ductal relocation surgery. The outcome of oromotor training was assessed by the change in VAS & Drooling

Quotient (DQ) from baseline, difference in drooling frequency & severity.

Result

Four children, with a mean age of 12.5 years old (Range: 10-15 years old), had completed the 6-months improvement program. All children suffered from cerebral palsy with severe mental retardation. Poor lip closure, inadequate jaw control and delay in swallowing were common oromotor difficulties. All children received oromotor training and home program. Three children underwent botulinum toxin A injection and one child was applied with hyoscine patch. The duration of follow-up was 6 months. The mean baseline VAS was 7.4 (Range: 4.8-10). When compared with the baseline, VAS rating during the training period decreased with a mean difference of 2.4 (Range: -0.7- 6.7). Both drooling frequency and drooling severity decreased with mean difference of 1.25 (Range: 0 to 3 & 1 to 2 for drooling frequency & drooling severity respectively). The mean baseline DQ was 57.5% (Range: 35% to 75%). When compared with the baseline, DQ rating during the training period decreased with a mean difference of 34.4% (Range: 12.5% to 60%). Other functional gains, such as improved sucking and swallowing ability, were also identified.

Conclusions: Oromotor training and medical interventions produce significant and sustained reduction in sialorrhoea in this pilot program. Longer follow-up and bigger sample size is required to study the effect on psychosocial and pulmonary morbidities.