Direct Swallowing Training and Oral Sensorimotor Stimulation in Preterm Infants: A Randomised Controlled Trial.

Ju Sun Heo, Ee-Kyung Kim, Sae Yun Kim et al.

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Background : Delays in full oral feeding attainment can cause growth retardation, prolonged hospitalisation, increased medical costs and neuro-impairment. Based on neural plasticity and neuroprotection, feeding related interventions take advantage of activity-dependent modifications. Many studies have focused on sucking skills, while few studies have evaluated swallowing training among preterm babies.

Objective: To evaluate the effects of Direct Swallowing Training (DST) alone and DST combined with Oral Sensorimotor Stimulation (OSMS) on oral feeding ability in very preterm infants.

Methods:

Design: Blinded, parallel group, randomised controlled trial (1:1:1).

Setting: NICU of a South Korean hospital.

Participants: Preterm infants < 32 weeks of gestation who achieved full tube feeding.

Intervention: Two sessions per day.

Group I: Control: Two times per day sham intervention.

Group II: DST: Direct Swallowing Training and sham intervention, each once a day.

Group III: DST+ OSMS: DST and OSMS interventions, each once a day.

DST consisted of placing a minimal bolus of formula feed (0.05-0.2ml) every 30s over the 15 min session or as tolerated. OSMS consisted of perioral or intraoral stimulation, followed by sucking on a pacifier. Interventions were provided by trained occupational therapist within 15-30 min pre-feeds for 15 min twice a day.

Primary Outcome: Time from start to Independent Oral Feeding (IOF).

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet

Transition from tube feeding to independent oral feeding in preterm infants: Accelerating methods

Results: 186 very preterm babies who reached full tube feeds were analysed for attainment of IOF. Modified Intention-to-treat analysis was used. (63 control, 63 DST and 60 DST+OSMS). The mean time from start to IOF differed significantly between the Control, DST and DST+OSMS groups. (21.1, 17.2 and 14.8 days, respectively, p=0.02). Compared with non-intervention, DST+OSMS significantly shortened the time from start to IOF (Effect size: -0.49; 95% CI: -0.86—0.14; p=0.02). However, DST did not show significant difference in this regard. The proportion of feeding volume taken during initial 5 min, an index of infants' actual feeding ability when fatigue is minimal, increased earlier in the DST+OSMS than in the DST group.

Conclusions: In very preterm infants, DST+OSMS led to the accelerated attainment of Independent Oral Feeding compared with non-intervention, whereas DST alone did not. The effect of DST+OSMS on oral feeding ability appeared earlier than that of DST alone.

Key Messages: Direct Swallowing Training and Oral Sensorimotor Stimulation have a synergistic effect on accelerating the acquisition of independent oral feeding in very preterm infants. Effect of combined DST and OSMS on oral feeding milestones and proficiency appeared earlier than that of direct swallowing training alone.

EXPERT COMMENT

"Very often, the transition from tube feeding to independent oral feeding is the reason that delays a preterm baby's discharge from the NICU. This study has shown that combined DST and OSMS are simple, effective, harmless interventions and when carried out with expertise, helped reduce the hospital stay by 7 days as compared to the control group. "

Dr Anita Nyamagoudar
Consultant Neonatologist
Shanti Hospital
Bagalkot, Karnataka

With warm regards,

DR MANINDER S DHALIWAL
Editor – Academic Pearls
pedpearls@gmail.com

DR. PIYUSH GUPTA
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DR REMESH KUMAR R.
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Reference

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