Feeding Interventions Resulting in Best Growth Outcomes for Children with Cleft Lip and/or Palate

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Introduction

- Cleft lip and/or palate (CLP) is the most common craniofacial defect.
- Infants with CLP have less efficient and shorter sucks, a faster rate of sucking, a higher suck swallowing ratio, an inability to generate negative intraoral pressure, and often times cannot latch onto the breast for feeding.
- These difficulties result in inadequate nutrition, thus leading to reduced weight and rate of growth compared to non-cleft children.
- Several interventions are used to address feeding difficulties for children with CLP.

Clinical Scenario

Emily is a graduate clinician who hopes to work with infants with cleft lip/palate (CLP).

Feeding interventions for this special population include the use of modified bottles (rigid and flexible), cup and spoon, syringe, modified feeding positions, obturating plates (prostheses), and breastfeeding.

Breastfeeding is the most popular method of feeding an infant. If breastfeeding was not an option, due to difficulties related to CLP, would another method produce similar results in weight gain and development?

PICO Question

Does breastfeeding (I) an infant with a cleft lip and/or palate result in more rapid growth (O), compared to the use of non-breastfeeding techniques (rigid and flexible bottles, cup and spoon, syringe, modified feeding positions, obturating plates/prostheses) (C) for infants with clefts (P)?

Methods

Systematic literature review performed.

Databases used: Cochrane Collaboration, Cleft-Palate Craniofacial Journal, PubMed.

Search Terms: Cleft palate, cleft lip, feeding, breastfeeding

Inter-rater reliability: 87-93%

References


Author & Research Design | Participants | Dependent Variable | Results | Discussion
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Bessell, Hooper, Shaw, Reilly, & Glenny (2011) | N = 252 (infants with CLP and nonsyndromic) | Increased weight gain post surgery (Breastfeeding vs. spoon feeding) | Breastfeeding Mean difference 0.47 (95% CI 0.20 to 0.74) | Syringe: Success comparable to bottle use. Education for parents: Anthropometric measures and parent satisfaction increased when education and support was provided by a specialist (dietitian, nurse, specialized consultant). Bottle feeding: Used rigid or squeezable bottle resulted in comparable weight gain among infants with CLP. Squeezable bottles were easier to use and required less modification compared to other bottles. Obsturator: Palatal obturators were most successful when used in combination with other feeding interventions. Cup and Spoon: A less efficient feeding method compared to other widely available interventions. Clinical Bottom Line: Mothers should breastfeed an infant with CLP if possible. If breastfeeding is not possible, a squeezable bottle containing breast milk is the best next option. Having access to education provided by a CLP or nutrition specialist increases anthropometric gains and parental satisfaction. Education and assistance provided by a specialist decreased hospital stay, decreased hospital costs, and increased clinical management of individual cases.

Brady, Brine, Bull, Litchcy, Manatunga, & Rickard (1994) | N = 30 (infants with cleft palate) | Increased weight gain (Comparing squeezing bottle vs. rigid bottle) | Not statistically significant (p < 0.21) | Environment & support decreased hospital stay, and increased clinical management of individual cases.

Goyal, Kaur, & Jena (2012) | N = 155 (infants with CLP and nonsyndromic) | Increased weight gain (Breast, bottle, breast + bottle, Spoon, dropper, glass, straw, most popular intervention) | Spoon feeding | Environment & support decreased hospital stay, and increased clinical management of individual cases.

Ize-Iyamu & Saheeb (2011) | N = 97 (infants with CLP) | Increased weight gain (Comparing syringe vs. cup and spoon) | Syringe with breast milk/formula (p < 0.02) | Environment & support decreased hospital stay, and increased clinical management of individual cases.

Shaw, Bannister, & Roberts (1999) | N = 57 (infants with CLP and nonsyndromic) | Increased weight gain (Comparing squeezing bottle vs. rigid bottle) | Not significant (p < 0.001) | Environment & support decreased hospital stay, and increased clinical management of individual cases.

Turner, Jacobsen, Humenczuk, Sinhaal, Moore, & Bell (2001) | N = 8 (infants with CLP) | Increased weight gain (Comparing Haberman vs. Haberman, obturator, & education) | Haberman, obturator, & education with breast milk, Cohen’s d = 0.14 (large) | Environment & support decreased hospital stay, and increased clinical management of individual cases.