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ORIGINAL ARTICLE

Clinical signs of dysphagia in infants with acute viral bronchiolitis☆

Lisiane De Rosa Barbosa[a,*], Erissandra Gomes[b], Gilberto Bueno Fischer[c]

[a] *Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA), Porto Alegre, RS, Brazil*
[b] *Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RS, Brazil*

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KEYWORDS
Bronchiolitis;
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Abstract
Objective: To determine the occurrence of clinical signs of dysphagia in infants with acute viral bronchiolitis, to compare the respiratory parameters during deglutition, and to ensure the intra- and inter- examiners agreement, as well as to accomplish intra and interexaminators concordance of the clinical evaluation of the deglutition.
Methods: This was a cross-sectional study of 42 infants aged 0-12 months. The clinical evaluation was accompanied by measurements of respiratory rate and pulse oximetry. A score of swallowing disorders was designed to establish associations with other studied variables and to ensure the intra- and interrater agreement of clinical feeding assessments. Caregivers also completed a questionnaire about feeding difficulties. Significance was set at $p<0.05$.
Results: Changes in the oral phase (prolonged pauses) and pharyngeal phase (wheezing, coughing and gagging) of swallowing were found. A significant increase in respiratory rate between pre- and post-feeding times was found, and it was determined that almost half of the infants had tachypnea. An association was observed between the swallowing disorder scores and a decrease in oxygen saturation. Infants whose caregivers reported feeding difficulties during hospitalization stated a significantly greater number of changes in the swallowing evaluation. The intra-rater agreement was considered to be very good.
Conclusions: Infants with acute viral bronchiolitis displayed swallowing disorders in addition to changes in respiratory rate and measures of oxygen saturation. It is suggested, therefore, that infants displaying these risk factors have a higher probability of dysphagia.

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☆Study conducted at Postgraduate Program in Respiratory Sciences, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil.
*Corresponding author.
E-mail: lisianeb@ufcspa.edu.br (L.R. Barbosa).

PALAVRAS-CHAVE
Bronquiolite;
Deglutição;
Disfagia;
Lactente

Sinais clínicos de disfagia em lactentes com bronquiolite viral aguda

Resumo

Objetivo: Determinar a ocorrência de sinais clínicos de disfagia em lactentes com bronquiolite viral aguda e comparar os parâmetros respiratórios entre as fases da deglutição, assim como realizar a concordância intra e interexaminadores da avaliação clínica da deglutição.

Métodos: Estudo transversal, com 42 lactentes, entre zero e 12 meses. A avaliação clínica da deglutição foi acompanhada das medidas da frequência respiratória e oximetria de pulso. Foi elaborado um escore de alterações de deglutição para estabelecer associações com demais variáveis do estudo e, para a avaliação clínica, realizada a concordância intra e interexaminadores. Os cuidadores responderam a um questionário sobre dificuldades de alimentação. O nível de significância utilizado foi $p<0,05$.

Resultados: Foram encontradas alterações na fase oral (pausas prolongadas) e faríngea (respiração ruidosa, tosse e engasgos) da deglutição. Houve aumento significativo da frequência respiratória entre o momento pré e pós-alimentação, e quase metade dos lactentes apresentou taquipneia. Observou-se associação entre o escore de alterações de deglutição e a queda de saturação de oxigênio. Os lactentes cujos cuidadores relataram dificuldades de alimentação durante a internação tiveram um número maior de alterações de deglutição na avaliação. A concordância intraexaminador foi considerada muito boa.

Conclusões: Lactentes com bronquiolite viral aguda apresentaram alterações de deglutição, acrescidas de mudanças na frequência respiratória e nas medidas das taxas de saturação de oxigênio. Sugere-se, assim, risco para a disfagia.

Introduction

Acute viral bronchiolitis (AVB) is a common infectious disease of the lower airways that affects mostly infants younger than 1 year. The disease is characterized by diffuse bronchiolar inflammation induced by respiratory syncytial virus (RSV) in 60% to 70% of cases.[1] Infants with AVB show wide variability in disease severity. Although prematurity, congenital heart disease, chronic lung disease, and immunodeficiency are known risk factors,[2] half of the infants who require hospitalization in intensive care units were full-term and previously healthy.[3]

The diagnosis of AVB is usually clinical, characterized by a first episode of wheezing in infants, accompanied by runny nose, cough, and fever.[2,4,5] As the disease progresses, tachypnea and wheezing may appear, along with increasing respiratory distress and contraction of the respiratory muscles during inspiration.[4,5] In the acute phase, bronchiolitis is often associated with nasal congestion, irritability, and feeding problems.[6]

Deglutition disorders in respiratory diseases are a more common complication than previously acknowledged, especially when associated with AVB.[6-8] The risk of aspiration in infants with AVB has been reported,[6-8] showing the possible interference of the respiratory symptoms in the deglutition process. A pioneer study[6] on this subject often cited in the literature indicates the presence of laryngeal pene-tration and tracheal aspiration in previously healthy and medically stable infants, who had difficulty feeding during hospitalization. In another study,[8] there was an association between tracheal aspiration and respiratory worsening of infants with AVB.

Dysphagia or deglutition disorder occurs when there is problem in one or more stages of swallowing and food bolus transportation; the lack of synchrony or coordination of these phases can lead to aspiration.[9] The need to coordinate the respiratory difficulty with deglutition forces the child to adapt to the complex process of swallowing.[10] The hypothesis is that infants with AVB suffer a deterioration arising from a compromised respiratory status. Consequently, they may be at risk for dysphagia and aspiration, worsening the clinical condition.

The primary objective of this study was to determine the occurrence of clinical signs of dysphagia in infants with AVB, and, as secondary objectives, to compare respiratory parameters between pre-feeding, feeding, and post-feeding stages and to perform the intra- and interrater agreement of deglutition assessment.

Method

Between July and September 2012, 42 infants diagnosed with AVB, younger than 12 months and admitted at Hospital da Criança Santo Antônio were selected. The study prospectively included infants who were born at term or with gestational age ≥34 weeks, previously healthy from the respiratory point of view and who were receiving oral diet. Exclusion criteria were diagnosis or investigation of neurological, cardiac, and genetic problems; presence of craniofacial malformations; use of prokinetics and antacids or diagnosis of GERD performed by esophageal pH monitoring; need for invasive mechanical ventilation during hospital-