Comparison of Risk Factors Associated with Unilateral and Bilateral Hearing Loss Identified by Newborn Hearing Screening

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ABSTRACT

Objective: To compare the incidence of Joint Committee on Infant Hearing (JCIH) risk factors and co-occurring birth defects in children with unilateral hearing loss (UHL) to children with bilateral hearing loss (BHL).

Methods: Retrospective review of 1375 children with confirmed hearing loss identified through universal newborn hearing screening (UNHS) program in Virginia from 2002-2010.

Results: Summary of Results: Of 493 children with confirmed UHL, 96.1% were identified through failed UNHS and 36% had one or more risk factor reported. Of 882 children with confirmed BHL, 95.7% were identified through failed UNHS and 31% had one or more risk factor reported. UHL, craniofacial anomalies (39.7%) and neonatal indicators (22.4%) were the most commonly reported risk factors. The association between JCIH risk factors has been studied in children with hearing loss (1-3). In addition, the presence of a co-morbid birth defect increases the chance that a child may need prolonged mechanical ventilator support, and multiple studies have demonstrated that mechanical ventilation greatly increases the odds of hearing loss (4-6).

The aims of this study are to: 1. analyze and compare the JCIH risk factors profiles of UHL and BHL; 2. compare the prevalence of various co-morbid birth defects with UHL and BHL.

CONCLUSIONS

1) About 31% of children with confirmed BHL and confirmed UHL had a JCIH risk factor. Most commonly reported risk factors were family history of hearing loss (53%), use of mechanical ventilation (46%), and craniofacial anomalies (46%).

2) Over 1/3 of children with either BHL or UHL had a co-occurring birth defect. The most commonly associated birth defect was a cardiovascular anomaly.

3) Over 50% of children with confirmed BHL and a JCIH risk factor had a co-occurring birth defect. Most common birth defect was cardiovascular.

4) It is important to recognize children at risk for hearing loss and to perform confirmatory testing in a timely manner despite distracting co-occurring birth defects.

5) The absence of JCIH risk and co-occurring birth defects does not preclude the development of hearing loss.

6) Further studies are needed to define the etiology underlying hearing loss and better define the role of risk factor associations.

REFERENCES


