

### Health Care Costs and Medical Outcomes in the Postoperative Management Following Supraglottoplasty in a Tertiary Care Center

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**Objectives:** Laryngomalacia (LM) is the most common cause of stridor in neonates, with a usually benign course; however, in severe cases, surgical management is required with supraglottoplasty (SGP). This is a procedure that manipulates the upper airways, requiring close postoperative care; nevertheless, there is little information published about this topic and its economic impact.

**Methods:** Supraglottoplasty is performed in our institution in children with severe LM using cold-steel instrumentation under endoscopic vision and general anesthesia. Postoperatively, patients are either extubated and sent to a pediatric ward or kept under orotracheal intubation and sent to an intensive care unit (ICU). This is an observational retrospective study in which the charts of children who underwent SPG were reviewed. Patients were separated into 2 groups: those who required ICU stay (group A) and those who did not (group B). Their medical outcomes, defined as resolution of stridor and weight gain, were assessed. The health care costs among them were also compared.

**Results:** Eighteen children with severe LM had SGP performed by the same surgeon. Group A included 11 patients (61%), with an average hospital length of stay of 9 days and an average cost of hospital stay of Mex\$40,000 (US\$2127); 45% of patients in group A had associated comorbidities. Group B included 7 patients (39%), with an average hospital length of stay of 4.4 days and an average health care cost of Mex\$12,000 (US\$638). None of these patients had comorbidities. In addition, 100% of patients in both groups had resolution of their LM.

**Conclusions:** SPG is an effective treatment for LM. Postoperatively, patients may be observed at an ICU or a pediatric ward with similar medical results; however, health care costs are much greater in patients who require ICU stay.

### Hearing Impairments in Children Living With Human Immunodeficiency Virus in Haiti

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**Objectives:** Children living with HIV in low-resourced settings are a vulnerable population and are at increased risk for hearing loss. It is not fully understood whether it is the HIV itself or the potentially ototoxic antiretrovirals (ARVs) that cause decreased hearing in these individuals.

**Methods:** A cross-sectional study of 176 HIV+ children (aged 9-17 years) was conducted in Port-au-Prince, Haiti,

from March to April 2019. The children underwent a clinically validated smartphone-based audiometric evaluation using a brief pure tone audiological screening followed by a more comprehensive pure tone audiometry assessment if the initial screening failed. In addition to audiometric data, hearing history (frequency of ear infections, otorrhea, otalgia, and parental perception of hearing loss) and HIV history (duration of ARVs and viral load) were also collected and analyzed.

**Results:** Of 176 participants, 77.3% passed the initial screening. Of those who failed, 12.8% had severe or profound hearing loss and 30.8% moderate hearing loss in either ear. Hearing loss was associated with a history of frequent ear infections (odds ratio [OR], 6.8; CI, 1.6-29.0) but not with duration of ARVs (OR, 1.03; CI, 0.83-1.27) or viral load (OR, 1.00; CI, 1.00-1.00).

**Conclusions:** Children who are HIV+ have a higher prevalence of hearing loss than what would be expected for children living without HIV. In addition, hearing loss was found to be associated with incidence of otitis media, but not duration of ARV, an important finding given the potential ototoxicity of these medications. The higher incidence of hearing loss in this at-risk population portends the need for cost-effective policies on screening, identification, and treatment of hearing loss in children living with HIV in low-resource settings.

### Identifying Causes of Threshold Shift in Large Vestibular Aqueduct Syndrome: A Pilot Study via Patient Questionnaire

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**Objectives:** Large vestibular aqueduct syndrome (LVAS) is a common cause of sensorineural hearing loss in the pediatric population. Within the temporal bone, the aqueduct is thought to play a key role in inner ear pressure and fluid homeostasis. External factors that involve changes in barometric pressure have been cited as precipitating further hearing loss in those with LVAS.

**Methods:** A questionnaire was posed to patients with LVAS, via telephone and mail. Of 96 patients who were contacted, 24 provided responses. The questions asked were regarding histories of plane flights, trips to mountainous regions, deep diving when swimming, head trauma, subsequent perceived hearing loss, and subsequent return of hearing. Patients' hearing was tested via behavioral audiogram every 6 months to 1 year.

**Results:** Of 18 patients who took flights, 2 reported a temporary hearing loss of minutes to hours with no change in the patients' audiograms obtained months later. Of 12 patients who took trips to mountainous regions, no patients reported losing hearing and all audiograms within months of the travel were stable. Of 22 patients who reported swimming and deep diving, none reported hearing loss. Of 7 patients who reported head trauma, 4 reported losing hearing. Of those 4, 2 reported that hearing levels never returned to normal, whereas 2 reported that hearing returned to baseline after a matter of hours. Audiograms confirmed that of the 4 patients with