

### Efficacy of injectable substances in the treatment of glottic insufficiency: A systematic review

Renato Battistel Santana\*, Regina Helena Garcia Martins, José Paulo Pinotti Ferreira Junior, Débora Pereira Henriques, Antonio Jose Maria Catâneo, Isabella Gonçalves Pierri, Alexandre Palaro Braga, Neemias Santos Carneiro  
*Departamento de Otorrinolaringologia e Cirurgia de Cabeça e Pescoço, Universidade Estadual Paulista "Júlio de Mesquita Filho" (Unesp), Botucatu, SP, Brazil*  
 E-mail address: [renato.battistel@hotmail.com](mailto:renato.battistel@hotmail.com)  
 (R.B. Santana)

**Objectives:** To evaluate, through a systematic review, the results of glottic insufficiency treatments with the two most used injectable substances (hyaluronic acid or hydroxyapatite).

**Methods:** The question is whether injectable substances (hyaluronic acid or hydroxyapatite) are effective in treating patients with glottic incompetence. As criteria for inclusion of studies for this review, studies evaluating the function of the vocal folds before and after one and six months of injection of injectable substances (hyaluronic acid or hydroxyapatite), adult patient with atrophy, scars and unilateral paralysis of the vocal folds with glottic incompetence. The intervention was the use of treatments with injectable drugs (hyaluronic acid or hydroxyapatite). Control was established with adult patients with atrophy, scars and unilateral paralysis of the vocal folds with glottic incompetence, before intervenção. As outcomes, the reduction of the score in the vocal handicap index questionnaire, reduction of the scores of the auditory-perceptual evaluation of the voice by the GRBAS scale and increase in the values of the maximum phonation time were evaluated.

**Results/conclusion:** Both injectable substances, hydroxyapatite or hyaluronic acid, proved to be effective in the treatment of glottic incompetence.

**Keywords:** Glottic insufficiency; Larynx; Voice; Fillers; Vocal fold.

<https://doi.org/10.1016/j.bjorl.2022.10.030>

### Language development in children with prelingual deafness from a public cochlear implant program

Alice Lang Silva<sup>a</sup>, Isadora Martins da Silva Stumpf<sup>b</sup>, Laura Prolla Lacroix<sup>c</sup>, Debora Milena Ferreira Alves<sup>c</sup>, Bianca Brinques da Silva<sup>b,\*</sup>, Adriana Laybauer da Silveira<sup>d</sup>, Sady Selaimen da Costa<sup>a,b</sup>, Leticia Petersen Schmidt Rosito<sup>b,c</sup>

<sup>a</sup> Programa de Pós-Graduação em Saúde da Criança e do Adolescente, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RS, Brazil

<sup>b</sup> Serviço de Otorrinolaringologia, Hospital de Clínicas de Porto Alegre (HCPA), Porto Alegre, RS, Brazil

<sup>c</sup> Faculdade de Medicina, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RS, Brazil

<sup>d</sup> Serviço de Fonoaudiologia, Hospital de Clínicas de Porto Alegre (HCPA), Porto Alegre, RS, Brazil

E-mail address: [bianca.brinques@gmail.com](mailto:bianca.brinques@gmail.com)  
 (B.B. da Silva)

**Introduction:** Prelingual deafness has a great impact on communication and, consequently, on cognition, school

performance, emotional development and psychosocial well-being. In cases of severe-profound deafness, cochlear implants (CI) may be indicated. Many hospitals provide this treatment in Brazil through the public health system. However, there are few national studies that evaluate the performance of patients implanted in developing countries.

**Objective:** To evaluate the rate of loss to follow-up in a CI program from the public health system in Southern Brazil as well as the characteristics of hearing loss, sociodemographic, sociocultural and the development of oral language in children with prelingual deafness.

**Methods:** Retrospective cohort study with children who underwent CI surgery between 2010 and 2020. Data was collected through of interviews and review of medical records. The language development assessment was performed using the MUSS, MAIS and IT-MAIS scales. For the classification of language development we used as parameters the values (mean  $\pm$  SD) found in a previous national study. From those values, the Z score for each patient at each hearing age (time of experience with the CI) was calculated.

**Results:** Of the 189 children implanted between 2010 and 2020, 129 were included in this study. The rate of loss to follow-up in the program was 31.7%. The mean age at first CI surgery was 40.5 ( $\pm$ 16.9) months, with 77.5% of patients having received a unilateral implant. Language results below the expected for hearing age ( $<Z$  score  $-1$ ) for the MAIS score were found in 59.7% of the sample, while for the MUSS score the proportion was 62%.

**Conclusions:** The high rate of loss to follow-up in the program is a fact that deserves attention together with the low percentage of language development of these patients. Some variables emerge as potential prognostic markers for this population and are in line with findings from other studies in the literature. However, such correlations deserve more attention in prospective and longitudinal analyses.

**Keywords:** Cochlear implant; Prelingual deafness; Language development disorders.

<https://doi.org/10.1016/j.bjorl.2022.10.031>

### Factors associated to language development in children with prelingual deafness

Alice Lang Silva<sup>a</sup>, Isadora Martins da Silva Stumpf<sup>b</sup>, Laura Prolla Lacroix<sup>c</sup>, Debora Milena Ferreira Alves<sup>c</sup>, Bianca Brinques da Silva<sup>b,\*</sup>, Adriana Laybauer da Silveira<sup>d</sup>, Sady Selaimen da Costa<sup>a,b</sup>, Leticia Petersen Schmidt Rosito<sup>b,c</sup>

<sup>a</sup> Programa de Pós-Graduação em Saúde da Criança e do Adolescente, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RS, Brazil

<sup>b</sup> Serviço de Otorrinolaringologia, Hospital de Clínicas de Porto Alegre (HCPA), Porto Alegre, RS, Brazil

<sup>c</sup> Faculdade de Medicina, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RS, Brazil

<sup>d</sup> Serviço de Fonoaudiologia, Hospital de Clínicas de Porto Alegre (HCPA), Porto Alegre, RS, Brazil

E-mail address: [bianca.brinques@gmail.com](mailto:bianca.brinques@gmail.com)  
 (B.B. da Silva)

**Introduction:** Cochlear implant (CI) has as its primary objective to promote access to sounds with consequent language development. However, outcomes are not constant,

reflecting the singularity of each child, their families and the social context they come from. Many variables have been previously explored to try to determine the role of each of them in language outcomes. Nevertheless, most of the research performed on these topics is carried out in developed countries. Considering that sociodemographic and sociocultural aspects seem to play an important role in child development, it is important that more studies are conducted in developing countries.

**Objective:** To explore the characteristics related to better language outcomes in a sample of pediatric patients with prelingual deafness from a public cochlear implant program in southern Brazil.

**Methods:** Retrospective cohort study with children who underwent CI surgery between 2010 and 2020. Data was collected through of interviews and review of medical records. The language development assessment was performed using the MUSS, MAIS and IT-MAIS scales and its results were compared with the ones from a previous study so a Z-score could be calculated to determine if language outcomes were as expected for the time of experience with the CI. To explore association between Z-scores and patients characteristics (clinical, sociodemographic and sociocultural) we initially we used Pearson's correlations coefficient. This approach was followed by multivariable linear regression with stepwise forward selection.

**Results:** Of the 189 children implanted between 2010 and 2020, 129 were included in this study. The rate of loss to follow-up in the program was 31.7%. The mean age at first CI surgery was 40.5 ( $\pm 16.9$ ) months. Characteristics associated to better language outcomes such as reading habit, exposure to bilingualism and speech therapy were found for this sample.

**Conclusion:** Further analysis should be conducted to evaluate if the variables that were found in this study confirm their importance for language development in this population.

**Keywords:** Cochlear implant; Prelingual deafness; Language development disorders.

<https://doi.org/10.1016/j.bjorl.2022.10.032>

### Relationship between unrehabilitated hearing impairment and the impact on speech recognition index

Elisa Cordeiro Nauck\*, Syriaco Atherino Kotzias, Anna Paula Bankhardt da Silva, Patrícia Rauber, Leonardo Albino Medeiros, Paula Nikolay, Henrique Carvalho

*Departamento de Otorrinolaringologia, Hospital Governador Celso Ramos, Florianópolis, SC, Brazil*

*E-mail address: [elisanauck@gmail.com](mailto:elisanauck@gmail.com) (E.C. Nauck)*

**Objective:** Analyze the relationship among the inadequate rehabilitation of hearing loss and the influence over the word recognition score.

**Methods:** Evaluation of 102 patients separated into two groups – a group with regular use of hearing aids and a group with irregular use of them – to correlate the word recognition score between both groups.

**Results:** First group (regular use of hearing aids) showed a improve tendency of the score ( $p < 0.001$ ) when compared

to the audiometry of the moment of the rehabilitation and the last audiometry. In contrast, the second group showed a deterioration of the word recognition ( $p = 0.012$ ) between the audiometries.

**Conclusion:** There is an association between the inadequate use of hearing aids and the worsening of the word recognition score, influencing the speech comprehension. This could lead to social impairment and, consequently, social isolation, depressive symptoms and dementia.

**Keywords:** Hearing loss; Rehabilitation of the hearing loss; Dementia.

<https://doi.org/10.1016/j.bjorl.2022.10.033>

### Impact of xylitol solution use after septoplasty associated with inferior turbinectomy

Bárbara Carolina Miguel Jorge\*,

Rafael Pessoa Porpino Dias,

Fernando Veiga Angelico Junior, Paula Ribeiro Lopes,

Jose Ronaldo de Souza Filho, Nathalia Basile Mariotti,

Rubens Dantas da Silva Junior, Mariane Araujo Guerra

*Departamento de Otorrinolaringologia, Faculdade de Medicina do ABC (FMABC), Santo André, SP, Brazil*

*E-mail address: [barbaracmj@hotmail.com](mailto:barbaracmj@hotmail.com) (B.C. Jorge)*

Nasal septum deviation correction surgery (septoplasty) associated with reduced size of lower nasal conchas (inferior turbinectomy) are very common procedures due to the high number of patients suffering from nasal obstruction due to mechanical component by nasal septum deviation and hypertrophy of lower nasal conchas. Despite being a safe procedure, it generates a series of postoperative discomforts, with potential for complications, which can be minimized by the proper visualization of structures during surgery and by the commitment to therapeutic measures in the postoperative period. There are several medications available to try to minimize such discomforts, with nasal washing with well-established saline solution and always indicated for reduction of the factors mentioned above, since it leads to the cleansing of mucus, crusts and cellular debris, reducing the probability of formation of synechia and accelerating the healing of the nasal mucosa. Other measures and medications are indicated according to the own experience of each surgeon. The present study aims to evaluate the impact of the use of the increased xylitol solution for patients undergoing septoplasty and inferior turbinectomy, since there are few studies in the literature that directly assess the action of xylitol on the nasal mucosa as well as on the quality of life of the patient during postoperative recovery.

**Keywords:** Septoplasty; Turbinectomy; Xylitol; Postoperative; Complications

<https://doi.org/10.1016/j.bjorl.2022.10.034>