

NEWBORN HEARING SCREENING: 5 YEARS' RESULTS

Inês Martins*; Mariana Rodrigues*; Herédio Sousa*

*Centro Hospitalar Universitário de Lisboa Central – Portugal

Introduction

In an average of 1000 healthy babies, up to 3 have sensorineural hearing loss (SN) but this incidence increases 20 to 40 babies if we take into account the newborns' high-risk factors.

Newborn hearing screening is essential to detect the total of babies with hearing loss ≥ 35 dB. If hearing loss is present, it will allow an early detection (before 2 months of age) and an adequate intervention / re(h)abilitation before 3 months of age.

Hearing screening is performed with Otoacoustic Emissions (OAE) and Automated Auditory Brainstem Response (aABR).

Objective

Characterize the newborns population, in a Portuguese central hospital (Centro Hospitalar Universitário de Lisboa Central - CHULC) from 2016-01-01 to 2020-12-31.

Methods

Retrospective analysis, for a period of 5 years, of diagnostic tests: 1000 Hz tympanometry and acoustic reflexes, ABR and behavioral audiometry performed in children that referred hearing screening.

Results

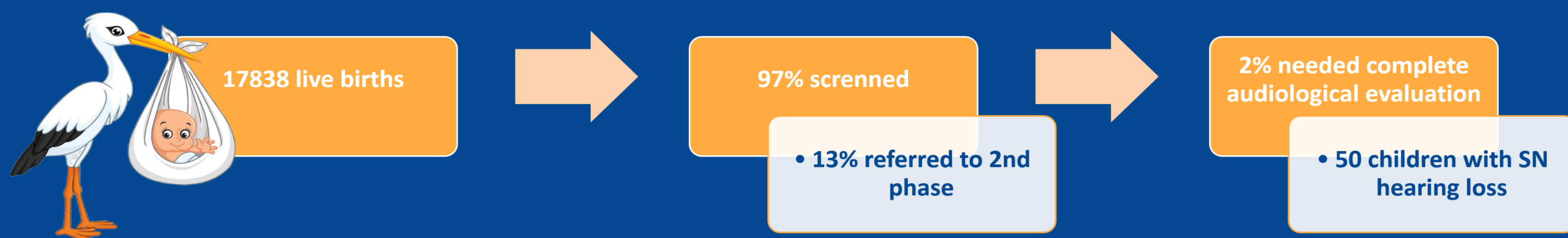
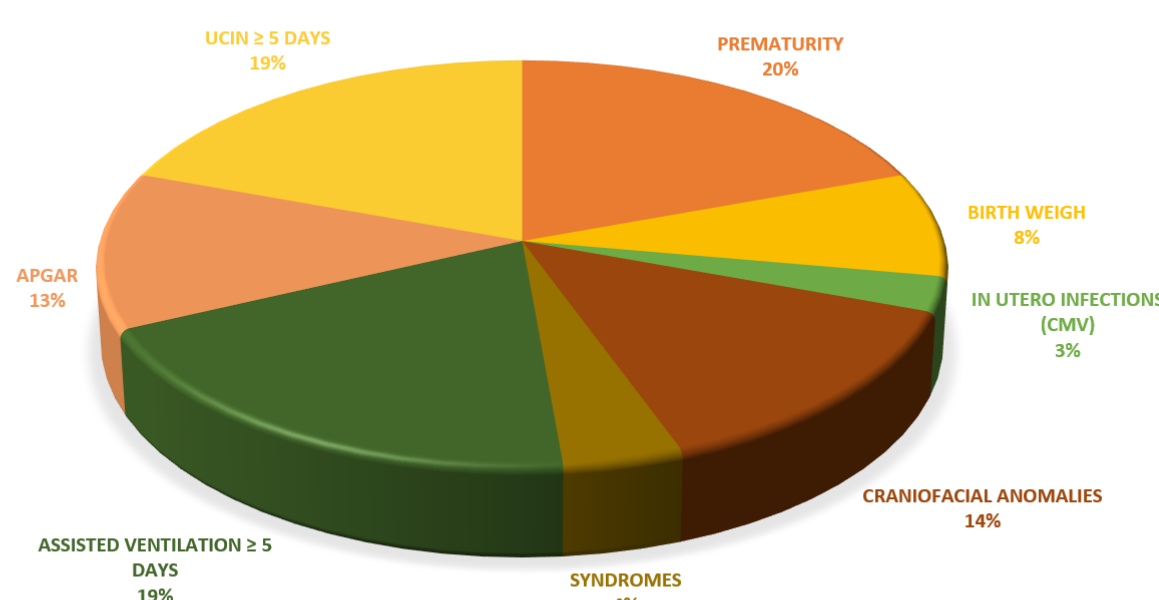


Figure 1 – Risk factors found in 36 children with hearing loss

- 3 – Family history of permanent childhood hearing loss
- 14 – Prematurity ≤ 33 weeks
- 6 – Birth weigh < 1500g
- 2 – In utero infections
- 10 – Craniofacial anomalies
- 9 – Apgar score 0-4 (1') or 0-6 (5')
- 14 – Neonatal intensive care (UCIN) ≥ 5 days
- 14 – Assisted ventilation ≥ 5 days
- 0 – Exposure to ototoxic medications or loop diuretics > 5 days
- 0 – Hyperbilirubinemia that requires exchange transfusion
- 3 – Syndromes associated with hearing loss



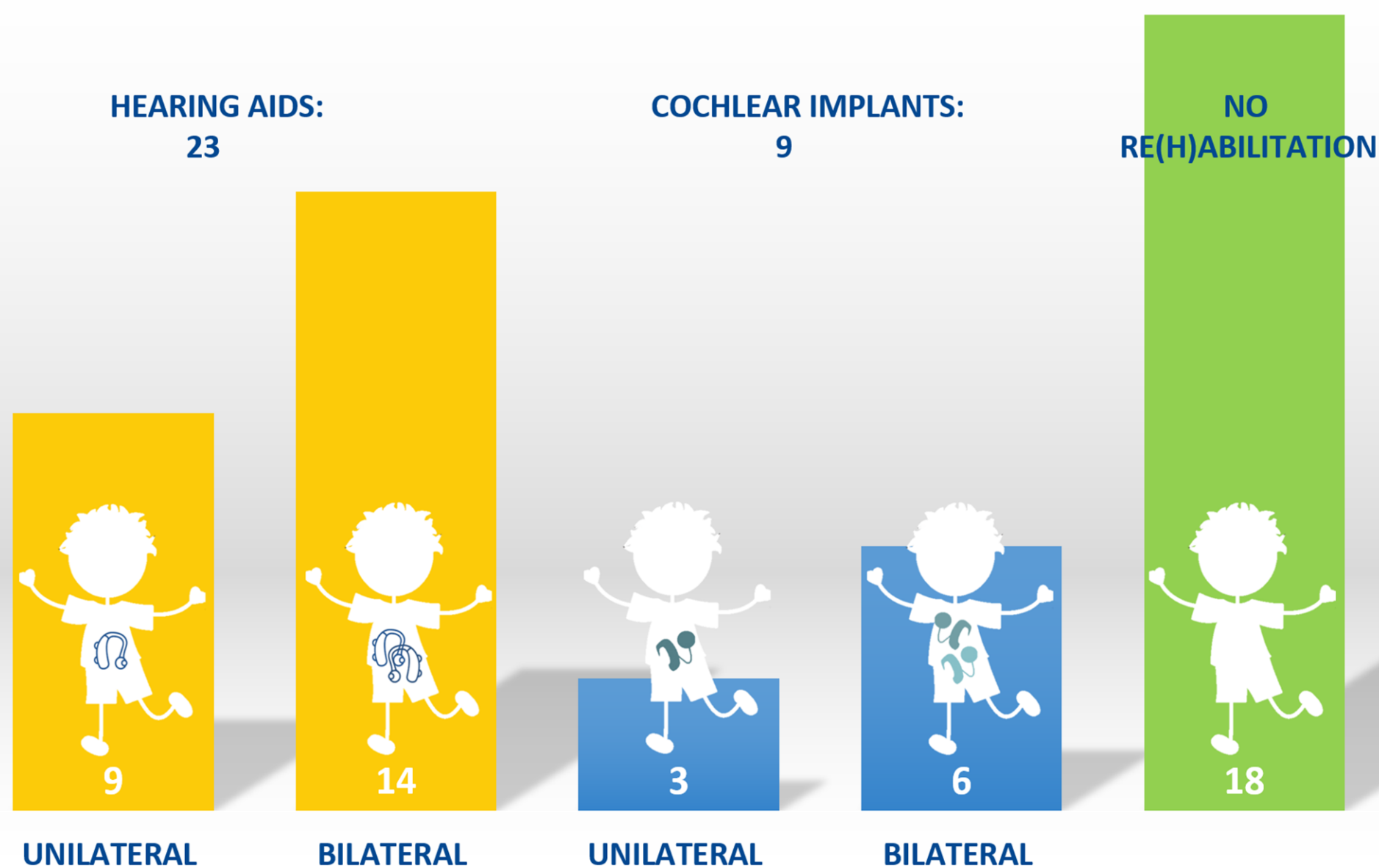
In the last 5 years, 17838 were born at CHULC maternity, and, during these years, it was reached the effectiveness level (>95%) for a newborn hearing screening program.

Diagnostic tests confirmed sensorineural hearing loss in **50 children**: 36 of those with, at least, one risk factor for hearing loss.

About the re(h)abilitation process, 32 children are already using some kind of hearing technology for auditory brain stimulation - **23 with hearing aids** and **9 with cochlear implants**.

18 children remain with no re(h)abilitation, half of them due to parents' decisions, directly related to cultural and ethnical beliefs.

Figure 2 – Re(h)abilitation process



Take home message

The fact that more than one quarter of the children diagnosed with hearing loss do not have known risk factors increases the importance of neonatal hearing screening programs.

Working with hearing screening programs in a multicultural community requires specific communication skills and an information support network. In addition, also means to respect the family's decisions, even if this implies a lack of follow-up and/or no child re(h)abilitation.

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