

ORIGINAL ARTICLE

Coverage and screening protocols in UNHS programmes in Italy in 2011: A nationwide survey

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Abstract

Objective: The aim of this study was to provide data on the degree of implementation, coverage and protocols used in Universal Newborn Hearing Screening Programmes (UNHSPs) in Italian birthing hospitals. **Methods:** Data were collected through a questionnaire that was sent to all birthing hospitals in Italy in 2011. Questionnaires were filled in by the chief of the hospital or by the UNHSPs coordinator. **Results:** UNHSPs in Italy were activated in 411 (81.3%) birthing hospitals, with 78.3% (413,212) newborns screened in total. Most (91.8%) of the Italian birthing hospitals used a two-stage (test-retest) TEOAE screening. The personnel performing the screening were nurses in 72.4% of hospitals, paediatricians in 10.2%, technicians in 11.0%, audiologists in 2.2% and external staff in 4.2%. In 80.1% of birthing hospitals, the mean referral rate at first screening performed before discharge was below 5%. **Conclusion:** The present study revealed that in the last three years screening coverage had a rapid growth from 60.6% in 2008 to 78.3% in 2011, without reaching UNHS coverage greater than 95%, as recommended in international guidelines. Our results suggest that close cooperation between audiological centres and maternity units, together with an efficient protocol for collecting screening data, has a positive impact on the implementation of UNHSPs. It is also crucial to improve the training of screening personnel and provide information and education about newborn hearing screening to paediatricians, neonatologists, gynaecologists, and general practitioners.

Key words: hearing loss, hearing screening, transient evoked otoacoustic emissions, prelingual deafness, sensorineural hearing loss

Introduction

Neonatal hearing loss is the most prevalent congenital sensorineural defect compared with other congenital pathologies in newborns, with an incidence rate of 200/100,000 live births for all degrees of hearing loss and 2–4/100 in neonatal intensive care units (1,2).

The consequences of late identification of hearing loss are associated with a negative impact on communication skills, educational attainment and quality of life, with a high cost to society (2). Studies on developmental plasticity of the auditory system have shown that sensory activity leads to neural development, while sensory inactivity can lead to a loss of responsiveness (3). Prolonged auditory deprivation can have permanently negative effects on the developing auditory system.

Without early hearing detection and intervention programmes, the diagnosis of profound hearing impairment is made at an extremely late stage, between 24 and 28 months of age, while children with mild or moderate hearing loss are often not identified before school age (4,5).

The benefits of early hearing detection and intervention on language development in children with hearing impairment have been proven by several studies (4,5).

The establishment of universal newborn hearing screening programmes (UNHSPs) to identify hearing loss has been recommended as a means to achieve early diagnosis by the most important international organizations (e.g. the National Institute of Health (6), the American Academy of Pediatrics (7), the Joint Committee on Infant Hearing (8,9), the European