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ASSESSMENT OF AUDITORY DEVELOPMENT IN THE FIRST YEARS OF LIFE IN INFANTS WITH RISK INDICATORS

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Abstract
Auditory monitoring is an option to monitor the auditory development of infants during the first years of life and to promote early diagnosis. Its objective is to analyze the auditory development of infants who passed the hearing screening, but had risk indicators for hearing loss in their neonatal history.

Key words:
Infant, Risk Index, Hearing Tests

Introduction

Auditory development goes through a gradual stage of complexity, in which the child must be able to detect, discriminate, locate, recognize and understand sounds. Therefore, an early diagnosis is essential for intervention during the first years of life[1,2].

According to national and international committees, newborns who have obtained satisfactory screening results but presented risk indicators for hearing loss in their neonatal history should be monitored[2,3].

Thus, this study aims to analyze the auditory development in the first years of life of infants who had satisfactory results in hearing screening, but who had in their neonatal history risk indicators for progressive hearing loss and/or late onset or changes in hearing auditory processing.

Results and Discussion

The present study was approved by the Research Ethics Committee of UNICAMP, under protocol No. 932.602/2015. Male and female infants were evaluated in the period from August 2017 to September 2018, who attended for evaluation in CEPRE/UNICAMP.

The sample was organized into three groups, considering the corrected age. Group 1 (6-9 months) with 40 subjects, Group 2 (9-13 months) with 56 subjects and Group 3 (13-18 months) with 59 subjects.

The evaluation consisted of anamnesis, observation of behavioral responses to nonverbal and verbal sound stimuli, visual reinforcement audiometry and evaluation of middle ear conditions.

Regarding the responses to non-verbal sound stimuli, the G2 and G3 infants presented 41.1% (n=23) and 18.6% (n=11) of indirect responses, respectively. Considering the age range of these groups, it was expected to respond directly downward, indicating delayed development of the ability to localize sound[4,5]. In the upward location the G2 group presented 69.6% (n=39) of indirect responses upwards and the G3 group, 40.7% (n=24). Analyzing the age group, in G2 the occurrence of indirect responses is expected. However, for G3 the results found indicate that infants are in the process of maturation and development of the ability[4].

For the responses with verbal stimuli, in the groups G2 and G3 the verbal command recognition test is performed. In the G2 group, 41.4% (n=23) of the infants recognized up to two command, a response lower than expected according to the literature[4]. In the G3 group, the recognition pattern remained, but with an incidence of 5.1% (n=3). It is believed that these infants are in the maturation stage of the recognition ability, once they have recognized more than one command.

Regarding visual reinforcement audiometry, the results obtained are within the normal range, considering the minimum level of response found and the age of the infant[4,6]. In the evaluation of middle ear conditions, infants who presented type B or C curves in the tympanometry were considered with alteration. In group G1 the incidence of alteration was 10% (n = 2), in the G2 group of 32% (n = 8) and in the G3 group of 40.7% (n = 11).

Conclusions

From the analysis of the results obtained, it was verified that the presence of risk indicators may influence the development of hearing abilities, however there were no infants with moderate or superior hearing loss. There was, however, occurrence of infants with middle ear alteration.

Auditory monitoring is essential for early identification and establishment of appropriate conducts.

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