

INDEX TO RETEST RETURN IN A NEWBORN HEARING SCREENING PROGRAM

Índice de retorno ao reteste em um programa de triagem auditiva neonatal

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ABSTRACT

Purpose: investigate the level of conscience of the parents in relation to the importance of the neonatal auditory selection, as well as verifying the reasons of not the attendance to the return set appointments after the first evaluation. **Method:** the casuistry was constituted by 31 responsible mothers in the neonatal unit of the University Hospital of Maringá, which had not appeared to the high return set appointments after the hospital one. **Results:** the reasons presented for the responsible mothers and/or for the attendance to the set appointments return had not involved attitudes that had been able to signal little importance attributed to the questions related to the hearing and the Newborn Hearing Screening, therefore suggest reasons irrelevant as the forgetfulness of the return, mother thought that the baby would not leave to be submitted to the examination and the loss of schedule for new evaluation. Such fact probably reflects the lack of awareness on the part of the mothers of the newborns how much to the importance of the Newborn Hearing Screening. **Conclusion:** exists to increase the general awareness in relation to the Newborn hearing screening, on the part of the familiar ones and the professionals who act directly with the newborns, which will contribute for the agility of the diagnostics process, guaranteeing better perspective to the future of carrying children of auditory deficiency.

KEYWORDS: Neonatal Screening; Hearing Loss; Infant, Newborn; Hearing Tests.

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■ INTRODUCTION

The incidence and prevalence of hearing loss in newborns (HL) is higher than other diseases which are evaluated in the maternity hospital, since any (NB) may submit hearing problem at birth or buy it in the first years of life, even when there is no case of DA in the family and/or risk factors for the HL¹.

In an attempt to minimize the negative consequences of the HL development of language, speech, sociability, education level, it is necessary to diagnose HL early, justifying the need for a newborn hearing screening program (NAS) by means of a procedure widely used as the evoked otoacoustic emissions (EOA), for being a technical non-invasive, fast and with low cost^{2,3}.

The (EOA) method consists in recording the sound energy generated by the cells of the cochlea

in response to the sounds emitted in the external acoustic meatus, allowing study of the mechanical aspects of the cochlear function of objectively before hospital discharge⁴.

In programs of neonatal auditory screening, the quantity of infants with normal hearing who present EOA absent, when tested in 48 hours after birth, is a complex issue, and is being discussed by health professionals. High rates of answers false-positive compromise the quality of the programs of NAS and increase the anxiety of parents with respect to the HL⁵.

Despite the high rate of false-positive results in the programs of NAS, the population of infants who present the result of failure with absence of responses of the EOA in one or both ears, cannot fail to attend the second evaluation, now that the babies patients with HL are among this group. Being necessary a retest in order to say with accuracy if the EOA missed due to the existence of HL or because of the existence of factors that compromise the first assessment in maternity as presence of vernix, change in OM, presence of noise during the examination, non-cooperation of the NB among others, generally performed 30 days after birth. This way, children who do not attend to the retest may have hearing problems not confirmed, implying future consequences.

Meanwhile, and observed low compliance rate of mothers and/or responsible for NB/ infants in monitoring programs of hearing development, which slows or prevents the early detection and immediate intervention of the HL⁶.

Therefore, it is important to increase the awareness to the problem of HL in childhood and emphasize the need for early detection, by facilitating the acquisition and development of communication skills and minimize the influence that the lead in the overall development of the child.

In this context, the present work aims to assess the level of awareness of the parents and/or responsible for NB on the importance of NAS, by means of obtaining the rate of visits to the retest reliability, as well as, check the reasons for which the parents and/or responsible not led the children to be subjected to a new assessment for the retesting.

■ METHOD

This study had the approval of the Standing Committee on Ethics in Research with Human Beings from the State University of Maringá CAAE no 0256.0.093.000 -06.

The sample was composed of 31 mothers and/or guardians of 286 newborns screened the neonatal unit at the University Hospital of Maringá, which did not attend to the retest scheduled after hospital discharge.

In the first stage of the study was performed a retrospective review of medical records of the NBS, which had result of failure in the examination of otoacoustic emission evoked by transient stimulus (EOA-T) uni- or bilateral and/or in the research of the cochleopalpebral reflex (CPR) In the first assessment, and that therefore, were summoned to the retest, usually 30 days after the first test.

Of the 286 NB evaluated, 20% of them did not attend to the retest, by this, the parents and/or responsible for NB were contacted via telephone and was investigated the reasons for not attending to the retest. The families, which had no phone to contact them, they were sent letters of convocation to parents for a new test.

EOA-T, CRP and impedance audiometry. At the moment, a questionnaire was applied, in order to verify the level of awareness of parents and/or responsible on the NAS, as well as to check the explanation about the non-attendance to the retest.

The questionnaire was composed of 12 questions, which dealt with the knowledge of parents and/or guardians of NB in relation to the NAS, the result of the first test, parents anxiety before the results, knowledge in relation to the hearing and losses arising from a hearing problem.

In the end, it has been held the speech-language intervention, constituting information the mother and/or responsible and guidance on the importance of attendance at the second examination, importance of the hearing for the development of speech and language of RN, general information about the NAS and the necessity of monitoring of hearing development and referral for evaluation and conduct ent in cases that have failed in the retest.

■ RESULTS

Data related to the mothers belonging to the study

In the completion of the first test, still in maternity, data were obtained from mothers related to age, profession and education, in order to assess the socio-economic level of the same. The results showed that the index of higher prevalence occurred in the age group between 15 and 25 years of age (64 %), the occupation most of the mothers were homemakers (68 %) and the majority of the mothers had 1ST degree incomplete (39 %).

Information concerning the absence of mothers to return

In accordance with the Table 1, the reasons justified by the mothers for not attendance to the retest scheduled in growing order went: 3 % of the mothers lost the hour to take the babies to the return; 3 % of the mothers informed that the baby was ill; 3 % of the mothers preferred to carry out the otoacústic emissions in a health center nearer

of the residence; 3 % of the mothers thought that the Rio Grande do Norte would not let carry out the examination; 3 % of the mothers told that it was not possible to bring two babies in the day of the retest; 7 % of the mothers informed oblivion; 7 % of the mothers was absent due to the work; and 16 % of the mothers resides in another city and they had not as it will attend the scheduled return.

Table 1 – Reasons of non-attendance to return (re-scheduled appointment)

REASONS	N	Freq. (%)
Wake up late / missed the appointment	1	3
NB infant was sick	1	3
Decided to do it on the health centre	1	3
He thought that the NB would not leave to do	1	3
Mother couldn't bring both children "at once"	1	3
Forgetfulness; failure, omission	2	7
Work commitments	2	7
Lives in another city and couldn't bring	5	16
Without contact details	17	55
Amount	31	100

Caption: N – number of subjects; Freq – frequency

Of 31 mothers who did not attend the retest, unfortunately, contact was not established with 55 % of same, because they were not located. It is worth explaining that, one got in touch with them he was seeing telephone for more of three times consecutive in different days and varied time-tables and also contact was seeing correspondence, however it was not possible to obtain result up to the conclusion of the study

Informations supplied by the mothers who attended the return referring to the hearing selection neonatal

The pictures 1 and 2 present data regarding the knowledge on the NAS of the mothers of the Rio Grande do Norte and the results referring to their reaction before the negative result of the NAS in the first evaluation carried out in the motherhood.

Relative to the knowledge on the NAS, only 1 mother (17 %) heard on the test during the gestation, in the hospital for a nurse. While, 5 mothers (83 %) did not hear on the subject, up to the realization of the first test.

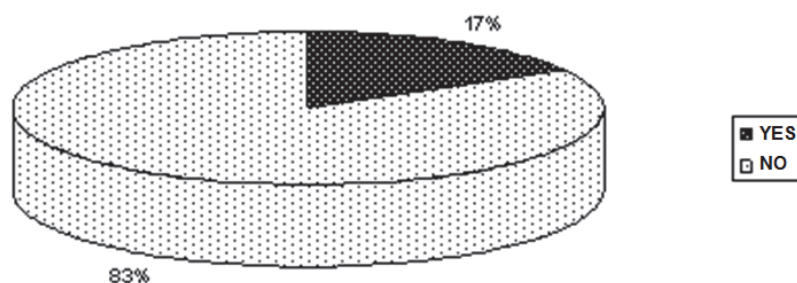


Figure 1 – Knowledge of the parents regarding the NAS

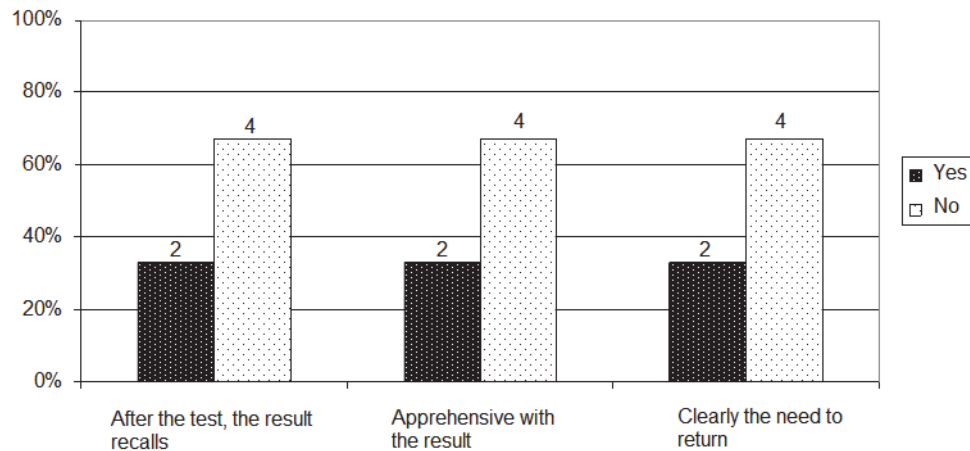


Figure 2 – Result of the first test and importance of return

As shown in Figure 2, of the mothers interviewed, 33% are reminiscent of the outcome of the first test performed even in maternity units, which have indicated that they were apprehensive about the negative result, leading them to believe that the son could have some hearing and affirmed that the therapist who performed the first test explained thoroughly on the importance of hearing and the need to retest, informing about the future impairments resulting from a “HL”. While, 67% of the mothers said they did not remind you of the result of the first test and were not apprehensive about the outcome of failure in the NAS and also reported that the pathologist responsible for test not emphasized the importance of the retest.

Of the interviewed mothers, all have already led the children(a) to the pediatrician, but only a mother commented with the pediatrician that the son was subjected to NAS soon after birth and that was obtained result of failure in the NAS. In this case, the pediatrician has provided explanations about the importance of hearing and the need for a return to a new test.

Data relating to babies and the outcome of the retesting of neonatal hearing screening

Of RN infants who attended the retest, 28% (n= 9) had less than 6 months, 15% (n= 5) had 6 complete months and 56% (n= 17) of the babies were older than 6 months of life.

Concerning the results of the retest, 67% of babies showed presence of EOA associated with the presence of RCP, tympanometric curve of type A and the presence of acoustic reflex. In these cases, was supplied high for babies and mothers received guidance on the relationship of the hearing with the development of speech and language.

While, 33% of babies showed an absence in the examination of the EOA tympanometric curve type B in both ears and absence of acoustic reflex in both scale-interval, as shown in figures 3 and 4. Due to these results, the mothers were sent to conduct an evaluation in HUM and oriented on the results of the exams and conduct adopted.

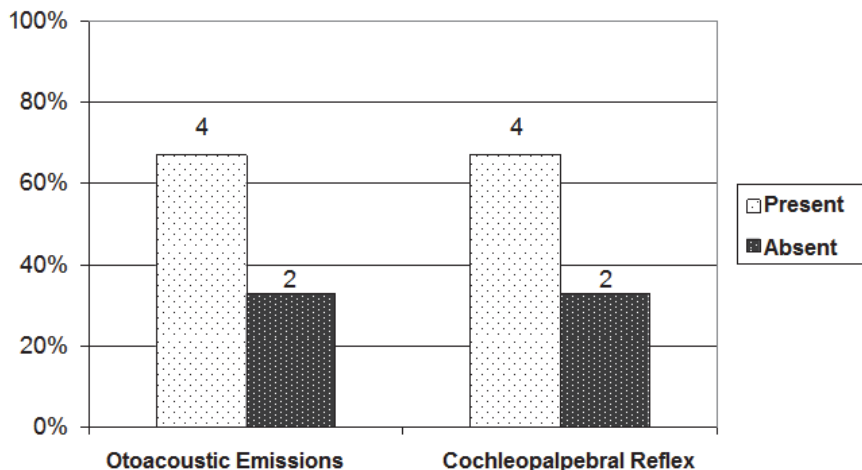


Figure 3 – Results of the examinations of the EOA and CPR

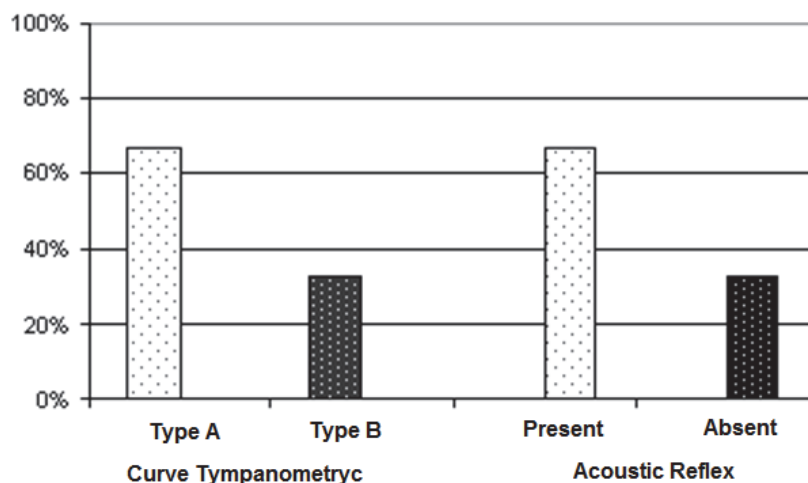


Figure 4 – Results of the examination of imitanciometry

■ DISCUSSION

Regarding the characterization of the mothers of NB, the age group occurred with a higher prevalence among 15 and 25 years of age and it was found that the same had low degree of instruction because the majority had only the 1ST degree incomplete, being mostly housewives, not economically active.

Such findings reveal school dropout, disqualification professional and difficulty of insertion in the labor market, already that with the arrival of the baby, the mother has to be with her child full time, at least in the period of breastfeeding. Such factors may affect the future prospects for the mothers and babies.

This way, the results of this study should be considered within the conditions of mothers belonging to a social class of low-income and low education. This fact comes from meeting with the data of Primo, Mr Amorin and Castro obtained in a

study of the social profile and obstetric women who have recently given birth to a maternity ward where they consider that the fertility tends to increase with the decline of education and educational performance⁷.

As it was possible to note in Table 1, it was noted that the reasons presented by mothers and/or responsible for the failure to appear at scheduled appointment involved attitudes that could indicate little importance attributed to issues related to hearing and the NAS, because reported reasons irrelevant as the forgetfulness of returning to the new exam, the mother thought that the baby would not be subjected to examination and the waste of time for further evaluation. This fact probably reflects the lack of awareness on the part of the mothers of the infants on the importance of NAS. The non-attendance to re-scheduled appointments despite the insistent recommendations on the importance of same, reflects the lack of clarification of the

population on the need to follow the development for the prevention of HL⁸.

The lack of knowledge about the NAS and not the concern of the mothers as to the outcome of the first assessment can be unfavourable to the program, causing the loss of NB for the return to the audiological diagnosis⁹.

The social, economic, and cultural level of the mothers of NB may have influenced for the little importance to the retest of NAS, since the low education level may cause difficulties in understanding the information is then fed back the results. In this case, the low degree of instruction of the mother intensifies the importance of guiding the family with clarity about the relevance of retest in NB and on hearing development¹⁰.

The awareness to families, if possible since the prenatal helps to decrease in avoidance program of NAS, once the lack of conditions of mothers assimilate the information received during the 48 hours when added a system of support to families, by means of the multidisciplinary team, that strengthens the bond with the auditory follow-up¹¹.

The grounds of lack of money for transportation to another city to the place of the examination, unable to take the NB accompanied by another child to the re-schedule appointment and the work commitments preventing the mother to take the NB to a retest, reflect in an economic problem of the parents. The factors related to the socio-economic condition as lack of access to health care services may delay the audiological diagnosis and exacerbate the consequences of HL¹².

Of the 31 mothers who did not attend the retest, unfortunately, was not established contact with 55%, by the fact that they have not been located via phone and via correspondence; it is not possible to persuade the mothers to take their children to be subjected to NAS. The difficulty in locating the mothers with the address and telephone in which was supplied by the same to the hospital, possibly occurred due to changes of usual residence, most of them don't own the own home together with the low income population change frequently. Fact that meets with the affirmation of Taschner, which described that, the housing issue is closely related to public health problems of the Brazilian people of low income¹³.

Thus, in order to improve access to the families to the NAS-T, it becomes important for integration with the family health program which already exists in many health-centers, for the location of babies with HL late onset and conclusion of diagnosis in pre-established time¹¹.

The success of NAS and the involvement of mothers with the program depend on the

inter-relationship of various factors such as support for the family health which, the public policy together with the population, the continuing education of professionals involved in all levels of health care, the existence of centers of excellence for early diagnosis and intervention and the use of standardized protocols and scientifically validated. This way, the effective participation and collaborative of country next to the program for early detection and intervention of HL increases the effectiveness of the diagnostic procedure^{14,15}.

With respect to knowledge of the mothers who attended the retest, the majority were unaware the NAS up to the moment of completion of the first assessment and did not remember the result obtained in the maternity ward and therefore, were not apprehensive about the outcome of failure in the NAS and also reported that the pathologist responsible for test not emphasized the importance of the retest, despite constant guidance on the hearing.

The result above mentioned may have occurred due to the low importance given by the mothers to NAS, as well as, the difficulty of the mothers to understand the information is then fed back the results of NAS have low educational level and by not being in psychological conditions in 48 hours of life of the NB to understand issues related to hearing. For this reason the awareness of parents on the NAS should be performed, if possible even in pre-natal period, due to the lack of conditions of mothers to assimilate the information received after delivery¹⁶.

A guidance clearly during the first test on the purpose of the procedure, the exam result and importance of retest would be a way to minimize the negative feeling of the parents about the NAS. It is important to clarify that, in the present study after each evaluation of the NB, the evaluators were channelled to mothers in a precise way, but in many cases, it was not possible to achieve the expected results. This shows that the only the orientation after delivery was not sufficient to achieve adherence by all mothers¹⁰. In this case, the introduction of explanatory leaflets on the NAS to be delivered to the family during hospitalization and more information on the part of the media may be a viable alternative¹⁷.

Another factor that highlights the neglect of mothers with respect to NAS and that of mothers who attended the retest, only one mother commented with the pediatrician that the son was subjected to NAS soon after birth and that was obtained result of failure.

Another important fact is that, all mothers have led the children to the pediatrician before the return, but no professional questioned the mother in relation to NAS, this shows that not all professionals involved

in neonatal care are united by increasing awareness and guidance to parents on the importance of NAS. However, the whole effort to effectiveness of NAS-T is only valid if the immediate awareness of professionals who work directly with the NB, in order to initiate the process of (re) habilitation. For this reason, it is important the work of the multidisciplinary team, the knowledge and the enhancement of health professionals involved in the pre and post pregnancy^{15,18}.

In this sense, Weichbold and Welzl-Muller emphasized the need of the healthcare team find strategies of guidelines that shake up the responsibility of parents and/or responsible for the hearing of the NB, avoiding a high level of concern and making the country confident to return to the audiological diagnosis⁹.

The findings of this study contradict the study of Ribeiro, which points out that when there is the suspicion of HL in the NAS, after the result of failure in EOA, parents start to experience a period of great anxiety, causing the country emotional stress that the long-term and the basis for the syndrome known as the "child vulnerable"¹⁶. That is, the parents treat the child as if they were more susceptible to accidents or medical problems, resulting in super protecting behavior¹⁹.

Such contradictions increase concern about the orientation and awareness of parents in relation to the retest. Therefore, even if the maternal anxiety before the false-positive result has been little common, before hospital discharge and necessary guide the family with clarity on the importance of retest in NB and on hearing development^{6,10}.

Of the babies who came to the retest, the majority showed positive results in the NAS, i.e., the presence of EOA-T associated with the presence of CPR. In this case, was given high for babies and mothers received guidance on the relationship of the hearing with the development of speech and language. However, of 6 babies who came to the retest, 33% of them showed an absence in the examination of the EOA, absence of the CPR associated with tympanometry curve type B in both ears and absence of acoustic reflexes in both scale-interval. In these cases, the NB that were not forwarded to the conduct and ent evaluation in University Hospital of Maringá and the mothers were targeted on the results of the exams and conduct adopted.

Babies who had no unilateral or bilateral of the result of EOA in maternity, who returned to the retest shows that in some country has already won the awareness of the importance of early diagnosis HL¹¹.

Of the babies who have conductive hearing loss in the retest, the same could be showing signs of hearing difficulty, which could justify the concern late mothers in relation to the hearing of the children and consequently bring the same to undergo further evaluation. In addition, the possibility of changes in a child's hearing during the first year of life by itself is a strong argument to justify the returns²⁰.

The findings of this study reinforce the importance of effective family participation in the programs of NAS, which would contribute to the streamlining of the diagnostic process, ensuring better perspective to the future of children with sensorineural hearing loss and better quality of life of children with HL conductive. After all, and primarily in the family context that are created the conditions for favoring the development of language, cognitive and social.

■ CONCLUSIONS

The main reasons for the non-attendance to the retest signaled little importance attributed to issues related to hearing and the NAS. For this reason, there is the need to introduce new techniques of guidelines for parents, clearly during the first test, on the purpose of NAS, the exam result and importance of the retest, in order to awaken greater responsibility of parents and/or responsible for the hearing of the NB and aid in reducing the avoidance in NAS-T.

There is need of parents receive more information on the part of professionals who work directly with the NB, because demonstrated ignorance on the NAS and on the importance of monitoring the development for the prevention of HL. The guidelines on the NAS should start in the gestational period, during the prenatal visits by professionals involved in care with the pregnant women.

There is a need to provide effective family participation in the programs of NAS, which would contribute to accelerate the audiological diagnosis, ensuring better prospects for the future of children with sensorineural hearing loss and better quality of life of children with conductive hearing loss.

RESUMO

Objetivo: investigar o nível de consciência dos pais em relação à importância da triagem auditiva neonatal, bem como verificar os motivos do não comparecimento ao retorno agendado após a primeira avaliação. **Método:** a casuística foi constituída por 31 mães e/ou responsáveis dos recém-nascidos da unidade neonatal do Hospital Universitário de Maringá, os quais não compareceram ao reteste agendado após a alta hospitalar. **Resultados:** os motivos apresentados pelas mães e/ou responsáveis para o não comparecimento ao retorno agendado envolveram atitudes que puderam sinalizar pouca importância atribuída às questões relacionadas à audição e a Triagem Auditiva Neonatal, pois sugeriram motivos irrelevantes como o esquecimento do retorno, mãe pensou que o bebê não deixaria ser submetido ao exame e a perda de horário para nova avaliação. Tal fato, provavelmente reflete a falta de conscientização por parte das mães dos recém-nascidos quanto à importância da Triagem Auditiva Neonatal. **Conclusão:** existe a necessidade de aumentar a conscientização geral em relação à Triagem Auditiva Neonatal, por parte dos familiares e dos profissionais que atuam diretamente com os recém-nascidos, os quais contribuirão para a agilidade do processo diagnóstico, garantindo melhores perspectiva ao futuro de crianças portadoras de deficiência auditiva.

DESCRIPTORIOS: Triagem Neonatal; Perda Auditiva; Recém-Nascido; Testes Auditivos

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