

Profile of the Patients Serviced in a High Complexity System

Perfil dos Pacientes Atendidos em um Sistema de Alta Complexidade

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SUMMARY

Introduction:

Hearing loss (HL) may cause severe consequences for the development of speech and learning. A resource of rehabilitation of the hearing impaired is the hearing aid (AASI). Information actions to the population and health professionals and approval of a law that assures the hearing impaired access to early diagnosis and intervention follow-up are seen as necessary measures. Such aspects have been contemplated by the Health Ministry (MS) in the publication of Administrative Rules GM no. 2.073, of September 28, 2004, and 587, of October 07, 2004. The Phonoaudiological Clinic of the Phonoaudiology Course of FOB/USP is certified by Administrative Rule GM/MS no. 2073, of September, 2004.

Objective:

To draw the profile of the patient serviced in a high complexity system with the goal of using the results found as a starting-point for acquisition of hearing aid, planning of auditory rehabilitation and structuring of follow-up groups for fitted patients.

Method:

Retrospective study. Reports review of 185 patients regularly registered in the period from August 2003 through August 2009. The data researched included: sex, age, social class, precedence, HL type and degree, HL etiology and type of hearing aid indicated.

Results:

There was a prevalence of male older low class patents with neurosensorial, bilateral and moderate level hearing loss.

Conclusion:

Prevalence of moderate level bilateral neurosensorial hearing loss with a higher index of older patients with the use of digital technology at a higher proportion.

Keywords:

hearing loss, health systems, ranking.

RESUMO

Introdução:

A deficiência auditiva (DA) pode acarretar sérias consequências para o desenvolvimento de fala e aprendizagem. Um recurso para a reabilitação do deficiente auditivo é o AASI (Aparelho de Amplificação Sonora Individual). Medidas de informação a população e aos profissionais da saúde, e aprovação de legislação que garanta o acesso do deficiente auditivo ao acompanhamento para diagnóstico e intervenção precoces apresentam-se como medidas necessárias. Estes aspectos foram contemplados pelo Ministério da Saúde (MS) na publicação das Portarias GM nº 2.073, de 28 de setembro de 2004 e 587, de 07 de outubro de 2004. A Clínica de Fonoaudiologia do Curso de Fonoaudiologia da FOB/USP está credenciada à Portaria GM/MS nº 2073 de setembro de 2004.

Objetivo:

traçar o perfil do paciente atendido num sistema de alta complexidade com o objetivo de utilizar os resultados encontrados como ponto de partida para aquisição de AASI, planejamento de reabilitação auditiva e estruturação de grupos de acompanhamento para pacientes adaptados.

Método:

estudo retrospectivo. Análise dos prontuários de 185 pacientes regularmente matriculados no período de agosto de 2003 a agosto de 2009. Os dados levantados foram: gênero, idade, classificação social, procedência, tipo e grau da DA, etiologia da DA, e tipo de AASI indicado.

Resultados:

houve prevalência de pacientes idosos de classe baixa, do gênero masculino, com perda auditiva sensorioneural, bilateral e de grau moderado.

Conclusão:

Predomínio da perda auditiva neurosensorial bilateral de grau moderado com maior índice de pacientes idosos com uso de tecnologia digital em maior proporção.

Palavras-chave:

perda auditiva, sistemas de saúde, classificação.

INTRODUCTION

The presence of a hearing loss (HL) may cause severe consequences for the development of speech and learning. The impact of the HL to the individual's quality of life is determined by the age of the acquisition of the loss, nature, degree of loss, lifestyle, professional occupation and perception of the consequent social and emotional disadvantages (1).

The HL is still one of the most frequent sensorial deficits present in the population worldwide. According to data of the study Global Burden of Disease (2), it was estimated that 278 million individuals in the planet had some kind of auditory deficiency from moderate to severe in both ears. Out of this population, 80% live in developing countries and about 50% of the hearing losses observed could have been avoided with prevention, early diagnosis and treatment.

A critical resource for rehabilitation of the hearing impaired is the hearing aid - Individual Sound Amplification Aid (AASI). The hearing aid is aimed to capture the sound and amplify them and conduct them to the ear of the hearing impaired (3). The use of hearing aid is a great chance to modify the results of the relation of the HI with the environment in which he/she lives (4).

Information actions to the population and professionals of the health field and the approval of a law that assures the hearing impaired access to early diagnosis and intervention follow-up are seen as necessary measures. Such aspects were comprised by the Ministry of Health (MS) in the issuing of Administrative Rules GM no. 2.073, of September 28, 2004, and 587, of October 07, 2004 (5, 6).

With deployment of public policies intended for hearing loss, Administrative Rule 587 is in charge of the basic attention in actions for promotion of the hearing health, prevention, early identification and informative and educational actions, family guidelines and provisions when required for the Service of Attention to the Hearing Health in the Middle and High Complexity that assures the specialized assistance to people with otological diseases, specially people with HL.

The Phonoaudiology Clinic of the Course of Phonoaudiology from USP / Campus Bauru is certified for Administration Rule GM/MS no. 2073, of September 2004, that establishes the national policy for attention to hearing health to be implemented into all the states, taking into account the competences of the three management spheres and, consequently, offers a

knowledge related to the hearing impaired and his/her form of rehabilitation.

The services to the population began in August 2003, and the clinic has so far attended approximately 1640 patients of the city of Bauru and region, and new patients are weekly forwarded by the Regional Division of Health (DRS). The services provided include forwarding to Otorhinolaryngologist, diagnosis, selection and hearing aid fitting, as well as auditory rehabilitation.

The Hearing Health attention services offered by the Phonoaudiology Clinic of Bauru, of High Complexity, are submitted to regulation, supervision, control and evaluation of the state and city manager, according to the duties set forth for the respective management conditions.

Our objective is to characterize the patients attended in a high complexity service of hearing health as for sex, type and degree of hearing loss, socioeconomic class and hearing aid.

METHOD

This research project was approved by the Ethics Committee in Human Beings Research of FOB/USP, under report no. 051/2009.

The research population was formed by hearing impaired individuals regularly registered with the Phonoaudiology Clinic of FOB/USP in the period of August 2003 through August 2009, with 1640 patients. The size of the sample was calculated by starting from an estimated significance of 10% with 1.4% precision, confidence interval and design effect of 2.0. The sampling calculation was carried out in the program EPI-INFO 6 and to determine how many persons would have to be evaluated 10% of these were chosen by lot as a systematic random sampling.

Base on this methodology, the researchers evaluated 185 reports.

The data scored was: sex, age, social class, precedence, HL type and degree, HL etiology and type of hearing aid indicated.

For performance of the study proposed the report should contain otorhinolaryngologic evaluation, full threshold tonal audiometry, socioeconomic classification according to criteria by GRACIANO (7) and etiological diagnosis defined when it is present in the report, referred to by one of the physicians of the staff.

For classification of hearing loss we used the audiometric threshold of the frequencies of 500, 1000, 2000 and 4000 Hz, and characterized as light hearing loss (average of 26 to 40 dB NA), moderate (average of 41 to 60 dB NA), severe (average of 61 to 80 dB NA) and deep (average over 81 dB NA), according to WHO (8), with analysis of the best ear for inclusion of the study data.

The socioeconomic classification of the patients was based on criteria: education of the family members, the highest level stated is remarked, of the responsible person or the patient himself/herself: Superior (S), Incomplete Superior (SD), Elementary School (GC), Incomplete Elementary School (GI), Basic Elementary School (GC), Incomplete Elementary School (GI), Without Formal Education / Illiterate (S). This classification was used to define the education of the study's individuals or the responsible people for the case of children, when they entered the service. The social classification was characterized as follows: Lower low Class (BI), Upper Low (BS), Lower Middle (MI), Middle (M), Upper Middle (MS) and High (A). Every classification is characterized by a scoring system.

For results analysis we applied the Chi-square tests and Fisher's exact test.

RESULTS

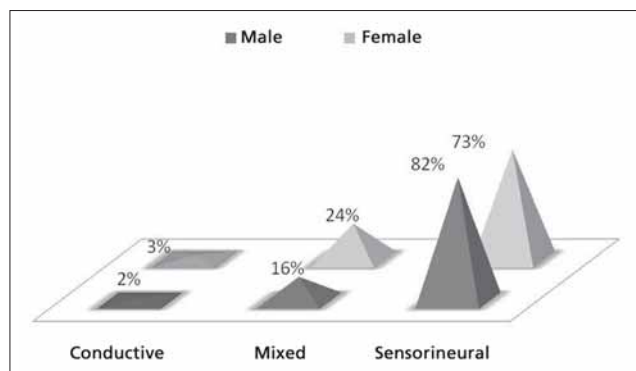
185 reports were reviewed and we confirmed: 54% of the male sex and 46% of the female sex, with age range from 7 to 96 years old, mostly elder (48%), out of whom 44% of the male sex (average of 77 years old) and 53% of the female sex (average of 78 years old). The individuals were diagnoses with hearing loss: 18% unilateral and 82% bilateral.

Graphics 1 and 2 represent the values found for type and degree of hearing loss, per sex.

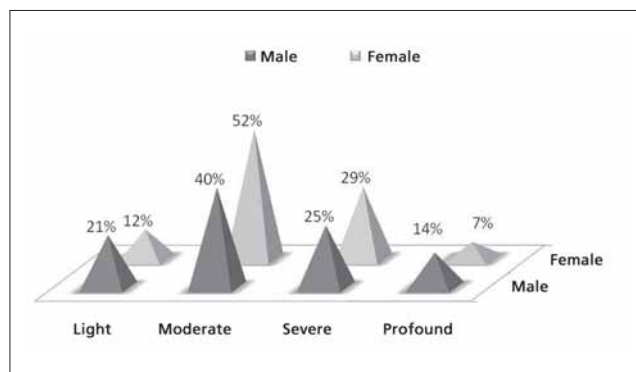
All patients use mostly digital hearing aid. Graphic 3 describes the data found as for the technology used. 71% retroauricular, 16% intracanal, 10% microcanal and 3% intra-auricular.

The reports reviewed confirmed that 36% of the patients were from Bauru, 97% from other cities of the State of São Paulo and 3% from other states. Out of 185 reports analyzed only four patients had a diagnostic report including: 2 presbycusis, 1 otosclerosis and 1 cranioencephalic traumatism, and the data collected could not be deemed to be statistical.

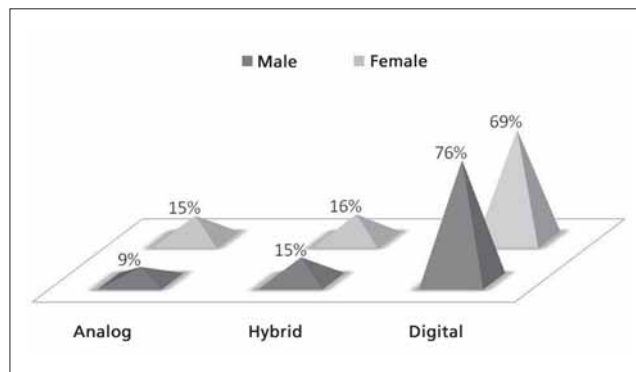
Graphic 4 presents data regarding the social classification.



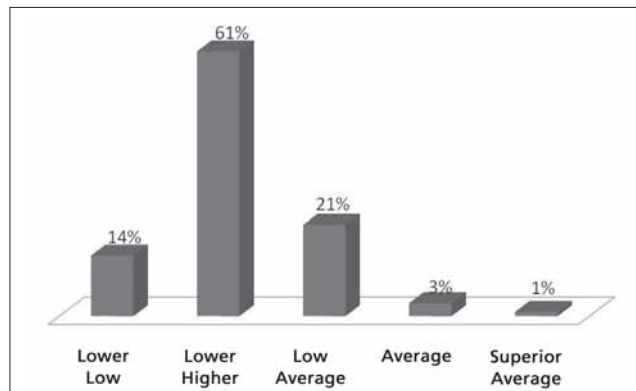
Graphic 1. Types of hearing loss.



Graphic 2. Degree of hearing loss.



Graphic 3. Technologies used in the fitted hearing aids.



Graphic 4. Social classification study.

DISCUSSION

From the data collected, we may conclude the predominance of the bilateral moderate neurosensorial loss in both genders. The prevalence of the bilateral neurosensorial deafness in other studies carried out with several populations (9-10).

According to researches (11, 12), in general, there is a consensus not only about the decline of the hearing function related to the natural process of human aging but also in terms of a higher hearing damage to men than to women. Such data confirms the results of the sample used in this research that confirmed 54% of patients of the male gender and 46% of the female gender.

Brazil is a country with significant growth of the older population. Currently, 16.8 millions of people in Brazil are aged 60 years or older in a total population of 183 million of people (13). We expect to reach a total of 32 million of elders by the year 2024. Consequently, Brazil is included in the world panorama of increase of human longevity. Due to this increase, we notice a higher effort of the health field professionals in the assistance for the problems inherent to aging, so as to help preserve its functions or adapt it to the modifications that occur during the process (15). It was noticed that 48% of the population are individuals older than 65 years of age.

The National Policy of Health of the Hearing Impaired Person (16) refers to the international literature, probably for the lack of studies of population base nationally, and defines the hearing loss due to aging as presbycusis, which has been indicated as the main cause of hearing loss among the elders, with a prevalence of about 30% in the population older than 65 years of age. The presbycusis causes a reduction in the speech understanding, which affects the communication process and interferes with social living, the psychological and professional life and also brings feelings of apprehension, fear, depression and isolation (17, 18).

The public health system in Brazil offers rehabilitation process, under Administration Rule 587, that comprises from the hearing loss diagnosis up to advisory for the hearing aid user (6). There is the fact that in the developing countries with high prevalence of hearing loss, the digital hearing aids may represent a barrier to the treatment, because of its cost. We expect that in the not too distant future, most, or rather all, hearing aids will be of digital technology, with a higher technological flexibility that results in better fitting strategies, increases the benefit to users and reduces costs, even for health services (19). Such statement may

be confirmed in the results found, in which 73% of the adapted hearing aids are of digital technology.

The digital technology allows us to have much more information concerning the amplified signal, whether for speech or environmental noise, in order to supply the individual auditory needs. The capacity to handle several performance parameters, along with the ability to modify them separately, becomes a strong point for the digital technology to keep on being adopted to supply the acoustic needs of the hearing impaired people (20).

The higher flexibility of the new technology must result in better fitting strategies, increase of benefit for users and reduce the costs both for the health services and for consumers themselves, who still have to pay for their hearing aids (19).

The sound amplification aids of digital technology use from dozens to thousands transistors that enable a much higher acoustic signal processing than that of analog technology. The hearing aid consists of electronic circuits and transducers that we call hardware and of software that enable us to control such circuits digitally and with fine precision (20). In the literature, it is possible to find references to several advantages of the digital sets over the analog ones, such as the capacity of programming, higher precision in the adjust of electroacoustic parameters, acoustic feeding control, reduction of noise, better reproducibility, and a signal and minor inner noise automatic control.

The mostly indicated sets were the retroauricular ones (71%). Such data may be justified by several factors seen in a program of attention to auditory health, such as, quotes for purchase of hearing aids, in which many times the bids do not include intra-canal hearing aid purchasing, the patients motor capacity, mostly elders (48%), and we may finally suggest the cost of batteries that have a lower durability in the intra-canal sets but with a similar cost to the retroauricular hearing aids. This data defies the research performed in Tocantins (21), where all individuals assessed used retroauricular hearing aid granted by the Ministry of Health.

A study (22) mentions that the prevalence of the unknown etiology for hearing loss emphasizes the need for etiopathological diagnosis detailing (genetic, images and lab studies) as a routine to obtain its causes. We observed that in this study, out of 185 reports reviewed only four had etiological diagnosis.

According to the strategies of this new policy, the audiological rehabilitation process begins to involve a much larger work that predicts the continuous flow hearing loss fitting, with medical and phonoaudiological follow up,

both for adjustments and periodical checking of the technical conditions and the benefits obtained with the use of such equipment, and, when necessary, of phonoaudiological therapy, in addition to social and psychological assistance.

As professionals acting in the area of human communication disorders, it is critical to manifest the importance of hearing for the maintenance of the social interpersonal relationships, which must be the main objective of an efficient hearing rehabilitation program (24) and acquisition of hearing aids relevant to the profile of the population attended.

CONCLUSIONS

- Prevalence of bilateral neurosensorial hearing loss of moderate degree with higher index of elder patients.
- Technological advance with fitting of digital hearing aids for significant number of patients.
- Difficulty of the service to clarify the HL etiology.
- Prevalence of upper low class patients.
- High number of services for patients of other cities.

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