

Overview of Child Otological Care at the Reference Health Center of Commune V, Bamako

Djibril Samaké* , Kadidia Bagayoko, Neuilly Ghislaine Tafo Ngninée, Siaka Soumaoro, Boubacary Guindo, Fatogoma Issa Koné, Sinaly Thiocary, Yatemelou Dara, Fatoumata Konaté, Ibrahim Diébakaté, Kadidiatou Singaré, Samba Karim Timbo, Mohamed Amadou Kéïta

ENT and Head and Neck Surgery Department, Commune V Reference Health Center, Bamako, Mali

Email: *samakedjibi@yahoo.fr

How to cite this paper: Samaké, D., Bagayoko, K., Ngninée, N.G.T., Soumaoro, S., Guindo, B., Koné, F.I., Thiocary, S., Dara, Y., Konaté, F., Diébakaté, I., Singaré, K., Timbo, S.K. and Kéïta, M.A. (2023) Overview of Child Otological Care at the Reference Health Center of Commune V, Bamako. *International Journal of Otolaryngology and Head & Neck Surgery*, 12, 203-213.

<https://doi.org/10.4236/ijohns.2023.124022>

Received: May 12, 2023

Accepted: June 13, 2023

Published: June 16, 2023

Copyright © 2023 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Aim: To profile the diagnostic and the care provided for otological conditions in children. **Method:** This was a prospective cross-sectional study carried out from March 1, 2022 to May 30, 2022 at the ENT Unit of the Reference Health Center of Commune V (Bamako). This study concerned the records of children with an otological condition. They were at their first consultation within the unit. The month of March was devoted to recruitment. The follow-up was done until the end of May. The parameters studied included epidemiological, clinical and therapeutic aspects. **Results:** We identified 184 children suffering from otological conditions out of a total of 559 patients that consulted during March 2022, *i.e.* an hospital prevalence of 32.9%. This study found ear infections in 60.3%. Earwax and epidermal plugs accounted for 32.60%. Traumatic injuries were 4.3%. Pre-lingual deafness was found in 1.1% of cases. Antibiotics were used for treatment in 66.3% of children without any complications detected. **Conclusion:** The otological affections of the child were frequent with a predominance of otitis.

Keywords

Otological Disorders, Otitis, Child, Care

1. Introduction

Ear pathologies were estimated at 66.4% of our consultations [1]. Some of its symptoms or functional sequelae such as deafness can constitute a disability at all ages [2] [3]. This handicap is serious in children and much more in toddlers who have not yet acquired oral language [2]. The Malian population is characterized by its youth. Children aged 0 - 15 years were assessed and represented 50.1% of the population [4].

In a context of underdevelopment and under-medicalization in a country at war for the past 10 years, the priorities are multiple. Taking care of children's otological problems in Mali can naturally take a back seat. They are often overlooked by inattentive parents because they may be invisible. In order to tackle this scourge head-on, awareness-raising by all means remains essential. Few studies have been conducted globally on these pathologies in children in health structures in Mali. The few publications deal with specific problems such as deafness among others [5].

2. Objective

The objective of this work was to determine the epidemiological, clinical and therapeutic profile of otological pathologies in children.

3. Methodology

The Ear Nose and Throat and Head and Neck Surgery (ENT-HNS) unit of the Commune V Reference Health Center (CSRéf CV) served as the framework for our study.

The Reference Health Centers (CSRéf) is the second level of the health pyramid of Mali (directly after the community level). Their vocation is essentially dedicated to the mother and the child (Maternity) health care. To avoid many patients going to first referral hospitals due to the absence of intermediate structures in Bamako, specialized units have been gradually created within CSRéf. Bamako has six CSRéfs distributed in each municipality.

This was a prospective descriptive study conducted at the ENT unit of the Reference Health Center (CSRéf) of Commune V of the District of Bamako. Patient recruitment has taken place for one month from March 1 to March 31, 2022 in an ordinary outpatient setting. Follow-up was provided until May 30, 2022. We included all new patients from 0 to 15 years who suffered from an ear condition. Furthermore, patients admitted to another department requesting an ENT opinion and patients lost to follow-up were not included. The variables to be studied were the elements of the interview, the results of the physical examination, functional exploration and imaging if necessary, the diagnosis, the treatment and the follow-up parameters. A systematic appointment was given to each patient depending on the case from 24 hours to one week.

These data were collected on an individual survey form, from the medical file and the consultation register. They were entered and analyzed using *SPSS*[®] 22.0 software.

4. Results

4.1. Epidemiological Data

4.1.1. Frequencies

We identified 184 children suffering from otological conditions out of a total of 559 patients (276 children "49.4%" and 283 adults "50.6%") consulted during the

month of March, *i.e.* a hospital prevalence of 32.9%. Thus, the prevalence of otological pathologies in pediatric population was 66.7%.

4.1.2. Sex

Boys represented 56.5% (104 cases) and girls 43.5% (80 cases). The sex ratio was 1.3.

4.1.3. Age

Children under three years of age accounted for 41.3% (**Table 1**).

The mean age was 4 years and 5 months with a standard deviation of 4 years. The extreme ages were 2 months and 14 years.

4.2. Clinical Study and Explorations

Otalgia was present in 41.3% of patients, rhinorrhea in 57.6% and otorrhea in 35.3% (**Table 2**).

Table 1. Distribution of patients according to age group.

Age class in (year old)	Effective	Frequency
[0 - 3[76	41.3%
[3 - 6[47	25.5%
[6 - 15]	61	33.2%
Total	184	100%

Table 2. Distribution of the study population according to reasons for consultation.

Reasons for consultation	Effective	Frequency %
Rhinorrhea	106	57.6%
Otalgia	76	41.3%
Otorrhea	65	35.3%
Otorrhagia	06	3.3%
Hand to ear	59	32.1%
Tinnitus	6	3.3%
Deafness	22	12%
Pavilion Wound	1	0.5%
Swelling of the auricular region	8	4.3%
Odynophagia	3	1.6%
Sneezing	29	15.8%
Headaches	7	3.8%
mouth breathing	4	2.2%
Irritability	12	6.5%
Nasal obstruction	47	25.5%
Cough	39	21.2%

The onset of the disease did not exceed 24 hours in 27.7% of cases. Self-medication was done in 27.7% of patients before the consultation. Recurrent nasopharyngitis was found in 89.1% of patients. One 4-year-old child (0.5%) had asthma in the study. Overbreathing and overuse of incense were found in 84.2% and 66.3% of patients, respectively. The other environmental factors responsible for the severity or recurrence of nasopharyngitis are listed in **Table 3**.

Children were correctly vaccinated in 92.9% of the cases. Childcare was provided by mothers in 46.7% (86 cases). They were kept in the public child care in 13%. Other family members and housekeepers performed this role in the rest of the cases (40.2%). Breastfeeding was mixed before six months in 63.4% of the 71 children who were not yet weaned during the study period.

The concept of consanguinity of parents was found in 30.4% of patients. Otoscopy was normal in one patient (0.5%) and pathological in 183 patients (99.5%).

Auditory Steady State Response (ASSR) and impedancemetry were performed in three patients. They were two cases of severe (80 dB) bilateral pre-lingual hearing loss and one case of moderate (50 dB) bilateral symmetrical conductive hearing loss with normal post-lingual otoscopy. The case of moderate deafness had been evolving spontaneously for a year. The child was 13 years old. A case of severe deafness (3 years) was associated with cerebral palsy (CMI) followed in Pediatrics and Functional Rehabilitation. The other case of severe deafness was 27 months old. He was from 2nd degree consanguineous parents and had a pre-lingual deaf older brother.

There was a decrease in compliance of both tympanic membranes in all three patients. The stapedial reflex was present in two cases and absent in the other case (IMC). The temporal bone tomodensitometry could not be performed in all three cases.

On the diagnostic level (**Table 4**), otitis had represented 60.3% (111 cases). Earwax and epidermal plug accounted for 32.6%. Traumatic pathology accounted for 4.3%. Functional pathology (deafness) was 1.6%.

4.3. Treatment

Oral antibiotics and analgesics-antipyretics (**Table 5**) were used in 66.3% and

Table 3. Distribution of patients according to contributing factors.

Contributing factors	Effective	Frequency %
Hyper-air conditioning	38	20.7%
Overbreathing	155	84.2%
Insecticide	67	36.4%
Passive smoking	50	27.6%
Dust	4	2.2%
Incense	122	66.3%

Table 4. Distribution of patients according to diagnoses.

Diagnosis	Effective	Frequency %
Acute otitis media	92	50%
Earwax and epidermal plug	61	33.2%
External otitis	10	5.4%
Traumatic pathology	08	4.3%
Otitis media with effusion (OME)	08	4.3%
Functional pathology (deafness)	03	1.6%
Chronic otitis media	01	0.5%
Foreign body	01	0.5%
Total	184	100

Table 5. Distribution according to the pharmaceutical classes used.

Pharmaceutical classes	Effective	Frequency %
Analgesics + antipyretics	135	73.4%
Antibiotics	122	66.3%
Antihistamines	46	25%
Ear drops	176	95.7%
Oral steroids	8	4.4%
Nasopharyngeal disinfection saline solution	113	61.4%

73.4% of patients respectively for treatment.

The combination Amoxicillin + Clavulanic Acid was used in 46.2% of patients. Paracetamol was used in all patients who had received analgesics. The 8 cases of otitis media with effusion (4.3%) did not require drainage by a tympanostomy tubes. Medical treatment (nasopharyngeal disinfection, corticosteroids, suppression of factors favoring tubal dysfunction) alone was sufficient.

4.4. Evolution

During the follow-up, we were able to verify that 93.5% of the patients had a favorable evolution after the care within a period varying from immediately to three weeks. The two cases of severe deafness were candidates for cochlear implantation. A total of 12 patients (6.5%) were lost during follow-up, including the cases of average conductive deafness with normal otoscopy and the patient chronic otitis media with perforation.

5. Discussion

5.1. Limitations

The limitations of this study were:

- The short duration of the study that was only three months. This was moti-

vated by an archiving problem. There are no electronic media or data server for electronic saving allowing the management of the consultation at the CSRéf. The files are drawn up on paper. The difficulties are:

- Very frequent homonyms, *Patients who do not bring old documents back often enough for a new consultation. However, we have opted for an arrangement of the files according to the date of the consultations and in alphabetical order.
- Workload: A single medical specialist with four medical assistants receiving 500 to 600 patients per month in difficult working conditions (cramped consultation and treatment rooms, dilapidated and rudimentary equipment, lack of air conditioning in a hot country en work space).
- Absence of microscope and aspiration allowing a good otoscopy. The alternative found is cotton swabs, portable otoscopes, makeshift oto-endoscopes after careful examination with a frontal mirror light.
- Absence of functional exploration. It was always performed outside, extending the circuit for patients who needed it.
- Failure to take into account cases treated in other units (Medicine, Paediatrics); the corollary of which is an underestimation of the real frequency of patients suffering from these pathologies and treated within the CSRéf.
- Lost patients: We most often assume that they have been cured or to a lesser extent that they have not been satisfied and have had to seek an alternative (conventional medicine in another structure or traditional medicine).
- The unavailability of means for bacteriological examination (no suction device allowing the trapping of pus so that it is not contaminated and the unavailability of infrastructure in the laboratory for this purpose). As a result, antibiotic therapy was probabilistic.

5.2. Epidemiological Data

5.2.1. Frequencies

Childhood otological pathologies accounted for 32.9% of our consultations. In the ENT pediatric population, the prevalence was 66.7%. Tall in Kolda (Senegal) and Ilechukwu G C in Nigeria had respectively found that otological pathology represented 33.9% and 63.3% of pediatric ENT recruitments [6] [7].

5.2.2. Sex

ENT pediatric affected both boys and girls with a male predominance. Vodouhe in Benin had found a female predominance by studying otological pathologies in general [8]. Whereas in India and Treichville (Ivory Coast), the predominance was male respectively in the study of childhood ENT pathologies and otological pathologies [9] [10].

5.2.3. Age

Children under three years old predominated (41.3%) in this study. The average age was 4 years and 5 months. The predominance of this age group is related to the high incidence of upper respiratory tract infections in this period. It is essen-

tially nasopharyngitis that reaches the middle ear through the Eustachian tube [6]. Tall found an average age of 6 years [7].

5.3. Clinical Study and Explorations

5.3.1. Examination

Otalgia was present in 41.3% of patients, rhinorrhea in 57.6% and otorrhea in 35.32%. The extremely painful nature of these pathologies may partly explain why 27.7% of patients consulted within 24 hours [11]. This pain could easily lead to self-medication, which is a real public health problem [12] [13]. In general, Paracetamol can be enough to temporarily relieve this pain [13]. This self-medication was practiced by 27.7% of our patients. This is often an altruistic desire to help and protect the child on the part of adults. The risk for antibiotics is a disturbance of the immune system and other side effects when it is not suitable and especially the emergence of resistance [12]. Ear drops pose a risk of ototoxicity and Paracetamol usage can lead hepatotoxicity [12] [13]. Do Santos had found 47.88% self-medication in his ENT patients at the Military Teaching Hospital Cotonou in Benin [12]. This self-medication could be motivated by the low-income power of the populations. Health expenditure follows a more dynamic upward trend than that of economic growth in developing countries [12] [14]. Other more affluent patients practice it for lack of time [14]. It is actually a real ignorance of the danger of this scourge [12] [13]. Otorrhea is a late sign that worries some parents while under the weight of culture, others trivialize it. Recurrent nasopharyngitis was found in 89.1% of patients. Several associated environmental factors were observed in these children as previously described by other authors. Indeed, any exogenous irritant factor (pollution, smoking) can be partly responsible for the genesis of these pathologies [15] [16].

5.3.2. Diagnoses, Treatments and Evolution

Otitis accounted for 60.3%. This observation of the predominance of infectious pathologies is in agreement with other authors findings [6] [9] [17] [18]. Acute otitis media (AOM) alone accounted for 50% of the study. It was followed by cerumen and epidermal plugs which represented 33.2% of diagnoses. These facts agree with previous studies [6] [8] [14]. Earwax plugs may be related to overuse of cotton swabs by parents or patients or may be related to excessive earwax production or particular anatomical conditions [7] [8]. The peak incidence of otitis media in children usually occurs during the first two years of life [16]. Most children have at least one episode of AOM. The incidence, estimated in a rather variable way, is maximum between 6 and 11 months. Before 3 years, more than half of children (50% to 85%) will have had an episode of AOM [19] [20]. It is due to the specific anatomical structure of the upper respiratory tract of young children and the tendency of children to spend a lot of time outdoors with mothers in our regions [16] [19]. In fact, their auditory tube is short, gaping and horizontal [19]. Fasunla in his study, had found 41% of acute otitis media in children by studying ENT pathologies. This was the most frequent ENT pathol-

ogy [14]. They are favored by dysfunction of the auditory tube, inflammation or chronic obstruction of the upper airways and by the fragility of the local terrain (local immunity, allergy) [9]. The interaction between poverty and ignorance is a major factor in the development of otitis media in our countries with limited resources [6] [14].

For treatment, nasopharyngeal disinfection and analgesics are necessary. Antibiotic treatment is necessary in the case of bacterial AOM, especially if the child is an infant and the symptoms persist and worsen. Amoxicillin + Clavulanic Acid are widely used as the first treatment intention. The evolution is most often favorable with a cure in 80% - 90% of cases [3] [19]. When poorly treated, acute otitis media can progress to recurrent otitis media with effusion, mastoiditis, labyrinthitis, meningitis, middle ear cholesteatoma, or other forms of chronic otitis media [3] [6]. We found 1 case of chronic otitis media with tympanic perforation and 4.3% of Otitis Media with Effusion (OME) which is the mother of all forms of otitis media [15]. It is recognized that OME probably affects all children at some point in their early years. Their pathogenesis involves a locoregional inflammatory state of probably multifactorial origin. Whether or not it is complicated by acute infectious accidents (realizing what we define by the acronym SIAC or secretory and/or infectious accidents of childhood); they raise the question of their place and their possible initiating role in the history and development of the various forms of chronic otitis media [21]. Ologe in Nigeria reported a prevalence of chronic otitis media among schoolchildren in a rural community at 73 per 1000 students [14].

Otitis externa is a common infection in children 5 - 14 years old. Earwax is acidic and contains lysozyme which can inhibit bacterial growth to help protect the external ear canal. It is likely that changes in the environment (water, heat, scratching) of the canal can predispose to otitis externa. They may be related to the use of soiled ear washing instruments [22] [23].

Traumatic pathology concerned 4.34% of children. In the ENT trauma profile presentation, Adegbiiji found that 50% of these lesions involved the ear. They can be complicated by otitis [24]. Foreign bodies in the ear were relatively rare (1 case). Children are very curious, eager to explore their surroundings and probe their head and neck orifices. They constitute emergencies depending on their nature [14] [25]. These ear foreign bodies were the second most prevalent ENT condition among children in a hospital in Nigeria [14]. However, ENT foreign bodies constituted 1.42% of our consultations in a previous study. These were mainly children (72.05%). Auricular location accounted for 58.83% [25].

Functional pathology (deafness) accounted for 1.6% (3 cases). Deafness is an important health problem in developing countries [14] [26]. When it is congenital, the impact is major on the lives of affected infants and their families. It is said that two out of three deaf people in the world live in developing countries. Reasons may include lack of appropriated programs for early diagnosis, prompt treatment, low income, poor education and poor access to great medical services [14]. Hearing rehabilitation after etiological treatment if possible is important

for a better quality of life [14] [27].

6. Conclusions

Childhood ear pathologies were dominated by otitis. Children under the age of three were the most affected. Earache, otorrhea and rhinorrhea were the main symptoms observed. When they are well treated, the evolution is most often favorable. Otherwise, they can develop into complications. Although these pathologies are not integrated into priority health policies, they can be a source of serious disability, in this case deafness. Financial constraints, ignorance and often negligence are factors that contribute to delayed diagnosis and therefore treatment. Raising awareness is essential in order to prevent and cure them. It requires massive awareness-raising among the population and political decision-makers involvement.

Improving the level of existing health infrastructure and greater accessibility to care constitute the way forward to minimizing the impact of these conditions. Universal hearing screening must be more than a reality as a prelude to a vast national program for ear health.

Funding Statement

The authors declare that they have not received any specific funding for this work.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Samaké, D., Sidibé, Y., Thiocary, S., Koné, F.I., Maïga, Y.M., Konaté, F., *et al.* (2019) Place of Otorhinolaryngological (ENT) Diseases in a 2nd Level Health Center: Case of the of Commune V (CSRéf CV) Reference Health Center of the District of Bamako. *International Journal of Otolaryngology and Head & Neck Surgery*, **8**, 91-97. <https://doi.org/10.4236/ijohns.2019.83010>
- [2] Bonfils, P., François, M., Aidan, D., Avan, P., Parat, S., Boissinot, C. and Narcy, P. (1995) La surdit  en p riode n onatale: Les bases du d epistage. *Archives de P diatrie*, **2**, 685-691. [https://doi.org/10.1016/0929-693X\(96\)81228-0](https://doi.org/10.1016/0929-693X(96)81228-0)
- [3] Vignikin-Y houessi, B., M dji, St., Djomou, F., Flatin, M. and Vodouh , S.J. (2010) Otites moyennes aigu s de l'enfant: 536 cas en ORL au CNHU de Cotonou. *La Revue africaine d'ORL et de Chirurgie cervico-faciale*, **8**, 34-38.
- [4] National Institute of Statistics of Mali (2021) Modular and Permanent Household Survey (EMOP). Rapport d'analyse premier passage (Janvier, Mars). 10th Edition, 14 p.
- [5] Ag Mohamed, A., Soumaoro, S., Timbo, S.K. and Konipo-Togola, F. (1996) Surdit  de l'enfant en Afrique noire: Cas de l' cole des jeunes sourds de Bamako (Mali). *M decine d'Afrique Noire*, **43**, 570-573.
- [6] Ilechukwu, G.C., Ilechukwu, C.G.A., Ezeanolue, B.C., Okoroafor, I.J., Ojinnaka,

- N.C., Ubesie, A.C., Emechebe, G.O. and Eze, J. (2016) Ear-Related Problems among Children Attending the Paediatric and Otorhinolaryngology Out-Patients' Clinics of the University of Nigeria Teaching Hospital, Enugu. *African Health Sciences*, **16**, 363-366. <https://doi.org/10.4314/ahs.v16i2.4>
- [7] Tall, H., Loum, B., Sy, A., Diom, E.S., Ndiaye, M. and Diallo, B.K. (2016) Pathologie orl pédiatrique à l'Hôpital régional de Kolda: À propos de 112 cas. *La Revue africaine d'ORL et de Chirurgie cervico-faciale*, **16**, 28-31.
- [8] Vodouhe, U.B., Guezo, D., Flatin, M., Dade, A., Avakoudjo, F., Adjibabi, W. and Yehouessi-Vignikin, B. (2015) La Pathologie otologique au Centre Hospitalier et Universitaire de zone de Suru-Léré. *La Revue africaine d'ORL et de Chirurgie cervico-faciale*, **15**, 4-7.
- [9] Mobio, M., Ehouo, F., Koffi, A., Yotio, A., Asseman, K., et al. (2006) Epidémiologie des pathologies otologiques. *La Revue africaine d'ORL et de Chirurgie cervico-faciale*, **4**, 32-36.
- [10] Rama Krishnam Raju, M. and Fareeduddin, M. (2020) Prevalence of Ear, Nose and Throat Disorders in Children at Government District Hospital Vizianagaram. *International Journal Otorhinolaryngology Head and Neck Surgery*, **6**, 497-500. <https://doi.org/10.18203/issn.2454-5929.ijohns20200623>
- [11] Boko, E., Dolou, W., Awesso, P., Amana, B. and Kpemissi, E. (2012) Otalgie: Epidémiologie et Etiologie. *La Revue africaine d'ORL et de Chirurgie cervico-faciale*, **12**, 30-34. <https://doi.org/10.4314/jrsul.v12i2.68038>
- [12] Do Santos Zounon, A.A.W.C., Vodouhe, U.B., Flatin, M.C., Oke, F., Bignon, W., Adjibabi, W. and Vignikin-Yehouessi, B. (2022) Caractéristiques de l'automédication en ORL à l'Hôpital d'Instruction des Armées-Cotonou au Bénin. *Journal Tunisien d'ORL*, **47**, 47-52.
- [13] Bouraïma, F.A., Koukouroun, A., Samaké, D., Do Santos, A., Avakoudjo, F., Flatin, M. and Hounkpatin, S.R. (2022) Connaissances et Pratiques des Pharmaciens et Auxiliaires des Officines de Pharmacie de la Ville de Parakou Face aux Topiques Auriculaires en 2021. *European Scientific Journal*, **18**, 294-308. <https://doi.org/10.19044/esj.2022.v18n36p294>
- [14] Fasunla, A.J., Samdi, M. and Nwaorgu, O.G. (2013) An Audit of Ear, Nose and Throat Diseases in a Tertiary Health Institution in Southwestern Nigeria. *Pan African Medical Journal*, **14**, Article No. 1. <https://doi.org/10.11604/pamj.2013.14.1.1092>
- [15] Blanc, F., Ayache, D., Calmels, M.N., Deguine, O., François, M., Leboulanger, N., et al. (2018) Management of Otitis Media with Effusion in Children. Société française d'ORL et de chirurgie cervico-faciale Clinical Practice Guidelines. *European Annals of Otorhinolaryngology Head and Neck Diseases*, **35**, 269-273. <https://doi.org/10.1016/j.anorl.2018.04.008>
- [16] Lukina, A.O., Maquiling, A., Burstein, B. and Szyszkowicz, M. (2021) Exposure to Urban Air Pollution and Emergency Department Visits for Diseases of the Ear and Mastoid Processes. *Atmospheric Pollution Research*, **12**, Article ID: 101198. <https://doi.org/10.1016/j.apr.2021.101198>
- [17] Boko, E., Dolou, W., Awesso, P., Amana, B. and Kpemissi, E. (2013) Panorama hospitalier des affections otologiques en consultation externe d'ORL en milieu urbain: Cas du Centre Hospitalier Universitaire Campus de Lomé-Togo. *La Revue africaine d'ORL et de Chirurgie cervico-faciale*, **13**, 39-43.
- [18] Tall, H., Lamarti, I., Ndiaye, M. and Diallo, B.K. (2017) Pathologie otorhinolaryngologique (ORL) au Centre hospitalier régional de Louga (Sénégal). Profil épidémi-

- ologique et clinique. *Revue Internationale des Sciences Médicales*, **19**, 135-138.
- [19] Van den abbeele, T. (2013) Otites Aiguës, Otites séro-muqueuses de l'enfant. Les Monographies Amplifon, No. 54, 152 p.
- [20] Lescanne, E., Lanotte, P., Pondaven, S. and Autret-Leca, E. (2006) Otites moyennes aiguës. EMC (Elsevier Masson SAS, Paris), Oto-rhino-laryngologie, 20-085-A-10, 11 p. [https://doi.org/10.1016/S0246-0351\(06\)39235-5](https://doi.org/10.1016/S0246-0351(06)39235-5)
- [21] Tran Ba Huy, P. (2005) Otites moyennes chroniques. Histoire élémentaire et formes cliniques. EMC (Elsevier Masson SAS, Paris), Oto-rhino-laryngologie, 20-095-A-10, 25 p. [https://doi.org/10.1016/S0246-0351\(05\)27955-2](https://doi.org/10.1016/S0246-0351(05)27955-2)
- [22] Larry, S.M.D. (2022) Otitis Media and Ear Infections: Bacteria. In: Rezaei, N., Ed., *Encyclopedia of Infection and Immunity*, Elsevier, Amsterdam, 259-262. <https://doi.org/10.1016/B978-0-12-818731-9.00121-X>
- [23] François, M. (2020) Pathologie du conduit auditif externe. *Journal de Pédiatrie et de Puériculture*, **33**, 183-192. <https://doi.org/10.1016/j.jpp.2020.06.002>
- [24] Adegbiyi, W.A., Olajide, T.G., Olajuyin, O.A., Olatoke, F. and Nwawolo, C.C. (2018) Pattern of Presentation of Ear, Nose, Throat, Head and Neck Injury in a Developing Country. *Research Journal of Health Sciences*, **6**, 3-12. <https://doi.org/10.4314/rejhs.v6i1.2>
- [25] Sidibé, Y., Samaké, D., Togola, A., Dara, Y., Thiocary, S., Touré, S S., Traoré, M., et al. (2021) Foreign Bodies in ENT from Peripheral Health Center of Bamako (Mali). *International Journal of Otorhinolaryngology*, **7**, 1-5. <https://doi.org/10.11648/j.ijo.20210701.11>
- [26] Vroh, B.T.S., N'gouan, J.M., Kouassi-Ndjeundo, J.E., Yoda, M., Mobio, N.M., Adjé, Y.A., et al. (2017) Dépistage des troubles auditifs en milieu rural: Bilan des Journées Nationales de l'Audition (JNA) de 2013 en Côte d'Ivoire. *La Revue africaine d'ORL et de Chirurgie cervico-faciale*, **3**, 58-65.
- [27] Hilviu, D., Parola, A., Vivaldo, S., Di Lisi, D., Consolino, P. and Bosco, F.M. (2021) Children with Hearing Impairment and Early Cochlear Implant: A Pragmatic Assessment. *Heliyon*, **7**, e07428. <https://doi.org/10.1016/j.heliyon.2021.e07428>