

Research article

## Making a case for improved exposure to Otorhinolaryngology for family physicians in training.

- <sup>1</sup>**James E. Tobih** (MBBS, FWACS) (e-mail: pilgrimhouse2012@gmail.com)  
<sup>1\*</sup>**Adedayo O. Olaosun** (MBChB, FWACS) (e-mail: dayoolaosun@yahoo.com)  
<sup>1</sup>**Taiwo O. Adedeji** (MBChB, FMCORL) (e-mail: adedejitaiwo2003@yahoo.com)  
<sup>2</sup>**Atilola A. Adeleke** (MBBS) (e-mail: atiadeleke@gmail.com)  
<sup>1</sup>**Olawale ogundiran** (PhD) (e-mail: captainseeler@yahoo.com)

<sup>1</sup>Department of Otorhinolaryngology Head and Neck Surgery, LAUTECH Teaching Hospital, Osogbo, Osun state, Nigeria.

<sup>2</sup>Department of Family Medicine LAUTECH Teaching Hospital, Osogbo, Osun state, Nigeria

\* Corresponding Author: Dr. Adedayo O. Olaosun  
Department of Otorhinolaryngology  
LAUTECH Teaching Hospital  
Osogbo, Osun State, Nigeria  
+2348033736113  
E-mail Address: [dayoolaosun@yahoo.com](mailto:dayoolaosun@yahoo.com)



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

---

### Abstract

**Background:** Otorhinolaryngology (ORL) disorders are among the most commonly seen in hospitals and communities. Many of the disorders that are commonly seen could be adequately managed by family and primary care physicians. However most are referred to otolaryngologists.

**Methods:** This was a retrospective cross-sectional study in which records of 18,243 patients who were seen in the General out-patient clinic of Ladoke Akintola University of Technology Teaching Hospital, Osogbo, Nigeria over a three year period were examined.

**Results:** About 6.3% of the cases seen at the GOPD during the study period had Otorhinolaryngology disorders. Of these, more than 98% of the were referred to the ORL clinic. *Otitis media* was the commonest disease seen (in 25%). Other commonly seen disorders included hearing loss (17%), cerumen impaction (17%), rhinosinusitis (11%) and tonsillopharyngitis (7.2%).

**Conclusion:** ORL diseases are common at primary care level and a large number of them are conditions that can be taken care of at this level. To improve outcomes for these patients and to reduce the patient burden and waiting lists of otolaryngologists, we recommend that during training, family physicians should undergo a more intensive and more practical exposure to Otorhinolaryngology than what they undergo at present. **Copyright © WJMMS, all rights reserved.**

**Key words:** Otorhinolaryngology disorders, prevalence, otorhinolaryngologists, family physicians, otorhinolaryngology training, primary care

---

## Introduction

Otorhinolaryngological (ORL) disorders are very common. A recent large cross sectional population-based household study of ORL disorders in Scotland reported a population prevalence of various ORL diseases as ranging between 7 and 31 % [1]. ORL disorders have also been reported as one of the commonest reasons why people present in hospitals [2,3]. Although a large proportion of patients with ORL disorders could have been effectively managed at the primary care level[2], that is not usually the case. They are referred to otorhinolaryngologists (Ear Nose and Throat specialists). Consequently, the workload of otorhinolaryngologists has been on the increase[3,4]. In Nigeria, the cases are usually referred with complications, after they have been mismanaged or given suboptimal treatment[5].

While it is true that the adequate management of ORL diseases requires a good knowledge of the anatomy and pathology of the Head and Neck region, and special instruments and equipment, adequate exposure of family physicians to the management of common ENT disorders during their training would give them the needed expertise for prompt and adequate management of many common cases, and the ability to identify and promptly refer those cases that require specialist attention. Such would improve the quality of care, reduce the incidence of complications and decrease the burden of hospital care [1, 5].

The aim of this study was to assess the prevalence of common ENT conditions presenting to the general outpatient department of the Ladoke Akintola University of Technology teaching hospital, Osogbo, Nigeria, in order to provide

a basis for promoting the need for family physicians to have thorough and qualitative exposure to ORL during training.

## **Materials and methods**

The study was a retrospective cross sectional study. The subjects studied were patients with ear, nose and throat (ENT) diseases who presented at the general outpatient department (GOPD) of Ladoke Akintola University of Technology Teaching Hospital, Osogbo, Osun State, Nigeria, over the three-year period between January 2011 and December 2013. The clinical records of patients at the General outpatient department (GOPD) were obtained and reviewed for information. Excluded from the study were patients whose case records could not be located and those with incomplete information. The information retrieved from patients' hospital records included patient's socio-demographics, clinical presentation, diagnosis and management. This information was managed and analyzed with Statistical Package for the social Sciences (SPSS) version 14 (Illinois, USA). Analysis was univariate and bivariate (chi-square test at 5% level of significance).

## **Results**

There were 1,157 patients with ENT disorders among the 18,243 patients who had been seen at the GOPD during the study period, This represented (6.3%) of the cases. Only 805 patients (m:f = 1: 1.1) had complete data for analysis. The median age of the patients was 32.0 years (range - 93 years). About one fifth (20.7%) of them were children aged 1-15years while the young adults (aged 16 – 35 years) formed the modal age group (38.6%). After initial assessment, more than 98% of the patients were referred to the ORL clinic for definitive management. Table 1 shows the age and gender distribution of the patients.

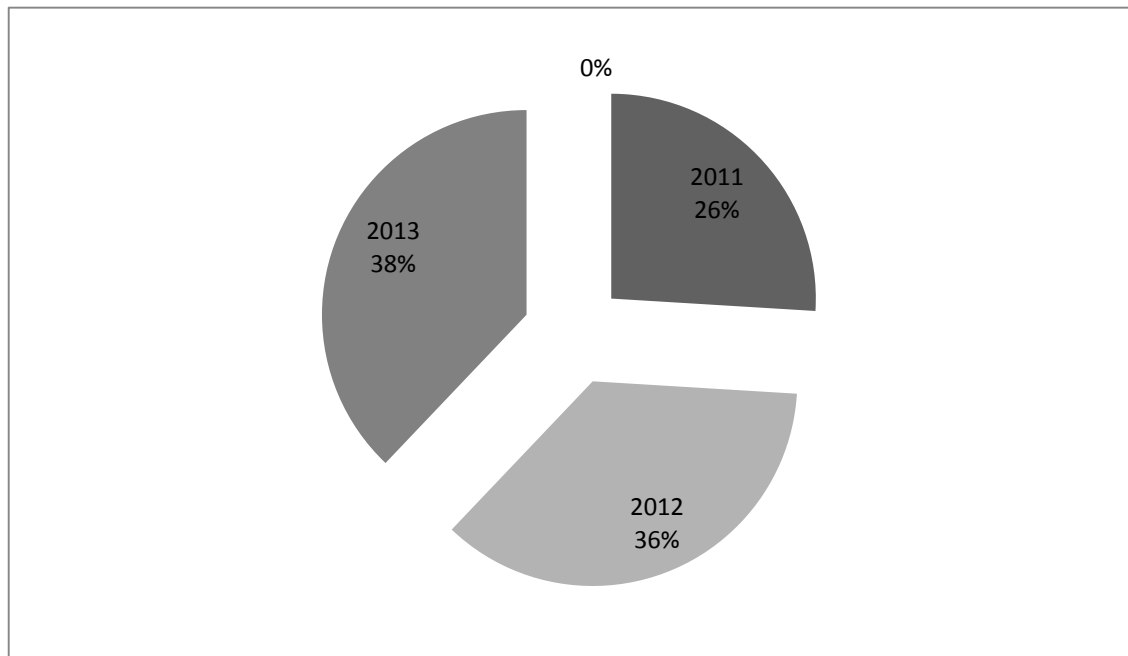
There was a marginal preponderance (56.1%) of patients seen during the raining season (April – September), and yearly distribution showed increases in the number of patients seen yearly (Figure 1). The majority (69.4%) were otology cases, 15.3% were throat cases, 14% were sinonasal cases and 1.2% were neck and lower jaw cases. In the ear, chronic suppurative otitis media (CSOM) was the leading diagnosis, affecting 25% of the patients. In the nose, rhinosinusitis was the leading diagnosis (11.8%) and in the throat; tonsillitis/peritonsillar abscess was the leading diagnosis in (7.2%). Table 2 shows the distribution of ENT disorders.

Table 3 shows the cross-tabulation of age with the diagnosis. There was a significant association between the diagnoses and age group. The largest proportion of those with CSOM was found among children aged 1-15. ( $X^2 = 126.78, p < 0.0001$ ).

**Table 1:** Age and gender distributions among the patients

Variables	Number	Percentage
<b>Age (years)</b>		
1 – 5	36	4.5
6 – 15	131	16.3
16 – 25	134	16.6
26 – 35	177	22.0
36 – 45	104	12.9
46 – 55	86	10.7
56 – 65	75	9.3
66 and above	62	7.7
<b>Total</b>	<b>805</b>	<b>100.0</b>
<b>Gender</b>		
<b>Male</b>	<b>381</b>	<b>47.3</b>
<b>Female</b>	<b>424</b>	<b>52.7</b>
<b>Total</b>	<b>805</b>	<b>100.0</b>

**Figure 1:** Yearly distribution of the patients.



**Table 2:** Distribution of the various ear, nose and throat disorders seen in the GOPD.

<b>Variables</b>	<b>Numbers</b>	<b>Percentage</b>
<b>Otologic</b>		
CSOM	201	25
Hearing loss/ tinnitus	137	17
Wax impaction	137	17
Ear FBs	26	3.2
Otitis Externa	23	2.9
Otalgia	21	2.6
Vertigo	13	1.6
<b>Nose</b>		
Rhinosinusitis	95	11.8
Epistaxis	9	1.1
Sinonasal mass	8	1.0
Nasal FB	3	0.4
<b>Throat</b>		
Tonsillitis /peritonsillar abscess	58	7.2
Pharyngitis	29	3.6
Throat FBs	10	1.2
Nasopharyngeal tumour	9	1.1
Halithosis	9	1.1
Hoarseness/ laryngeal mass	7	0.8
<b>Neck/jaw</b>		
Parotid mass	6	0.7
Others	4	0.5
<b>Total</b>	<b>805</b>	<b>100.0</b>

**Table 3:** Association between the various diagnoses of ENT disorders and age group

Diagnosis	Age range (years)				Total
	1-15	16-35	36-55	> 55	
CSOM	73	67	38	23	201
Hearing loss/Tinnitus	23	37	37	40	137
Wax impaction	29	53	26	29	137
Rhinosinusitis	9	46	26	14	95
Tonsillitis	9	33	10	6	58
Pharyngitis	1	14	11	3	29
Ear FBs	6	10	9	1	26
Throat FBs	2	3	3	2	10
Nasopharyngeal mass	-	5	3	1	9
Sinonasal mass	1	3	2	2	8
Otitis externa	8	7	6	2	23
Otalgia	1	12	7	1	21
Vertigo	-	3	4	6	13
Others	5	18	8	7	38
<b>Total</b>	<b>167</b>	<b>311</b>	<b>190</b>	<b>137</b>	<b>805</b>

$X^2 = 126.78, p < 0.0001$

## Discussion

In this study, 6.3% of the patients who attended the general out-patients department had ear, nose and throat disorders and after initial assessment, more than 98% of the patients were referred to ENT clinic. . This finding corroborates the assertion that ear, nose and throat disorders are common conditions in all communities and that most are managed by ENT surgeons [1, 2, 3]. A large population based national cross-sectional postal survey in Scotland reported prevalence of ear, nose and throat disorders that ranged from 6 – 55% [1]. Other similar studies have also reported that ENT problems were among the commonest reasons for attending Hospital [4, 6]. Marinos[7] in Greece, in the study ‘Management of minor medical problems and trauma: the role of general practice’ reported that ENT patients constituted a significant proportion (14 %) of their study population.

Although ENT disorders cuts across all age groups, in the present study, there was a preponderance of the disease among young adults. a finding which may be a reflection of the disease pattern in the GOPD. The raining season was associated with higher prevalence of upper respiratory tract diseases. This was expected and can be explained by the increased risk of respiratory tract diseases in cold weather and cold climates. This may also be responsible for the marginal preponderance of patients with ENT disorders seen during the raining season in our study. Most of the previous studies however did not report seasonal variation of patients with ENT disorders that presented via an outpatient department. The increasing number of Otolaryngologists may have been responsible for the increase in the number of patients with ear nose and throat conditions seen from one year to the other. In our study, CSOM was the most common of ENT disorders (25%), with the highest prevalence found among the children. CSOM is a major health problem in many populations around the world and the burden from it (especially from to hearing loss and impairment to speech development) in children is more than that from trachoma, and comparable to that from polio[8]. The diagnosis of CSOM is made by history and examination, including otoscopy, and careful cleaning of the ear is useful for visualizing the tympanic membrane for accurate diagnosis[9, 10, 11]. Fisher et al recommended that otoscopy skills are needed by the family physicians for accurate diagnosis of ear infections[12]. and according to the WHO/CIBA foundation workshop, in order to ameliorate the burden of the disease associated with CSOM[8], strategies should include proper training of available non ENT specialists, including general/family physicians on proper and effective diagnosis (to avoid complications) and on the ability to recognize and appropriately refer cases of otitis media with complications[8].

The structure and organization of health system in Nigeria is such that the GOPDs of most tertiary and secondary health care centers are manned by the family physicians. The new and widely accepted National Health Insurance Scheme is also being manned by the family physicians. These locations are the usual entrance points to most hospitals (except for emergency cases). The adequate exposure of family medicine residents to proper diagnostic techniques and treatment modalities will therefore significantly improve the quality of care for patients who enter the hospital through the Family Medicine clinic.. Previous studies have also recommended that family physicians need more involvement with ear, nose and throat problems [4, 12]. If they get more involved, developing countries like Nigeria will be able to meet the recommendations of WHO/CIBA foundation on how to ameliorate the burdens of disease associated with CSOM and to the reduction of patient burden for otolaryngologists.

Hearing loss / tinnitus constituted the second most common (17%) diagnosis in our study. It was the leading complaint (29.2%) among the elderly age 56 years and above. Hannaford et al in Scotland reported that about 20% of the large population based national cross-sectional postal survey respondents reported having hearing difficulties and problems causing worry or upset and one fifth (20%) reported noises in head or ears (tinnitus) lasting more than five minutes[4]. More than 28 million Americans have some degree of hearing impairment[13]. The World Health Organization (WHO) estimated that globally, the number of people with hearing loss at present is about 360 million, thus making this condition the most prevalent sensory deficit in the population.[14–15]. Hearing loss is a very common problem [13 - 15]. It could be conductive, sensorineural or mixed in nature [13]. Major causes of

conductive hearing loss (e.g. foreign bodies in the ear, cerumen/wax impaction, otitis media etc) could be effectively managed by well-trained primary care physicians[13]. Only cases that already have hearing loss, those that need surgical intervention, and cases of congenital and early onset hearing loss need be promptly referred to the Otolaryngologist. Isaacson et al [13] in USA opined that an understanding of the indications for medical management, surgical treatment, and amplification of hearing impairment can help the family physician provide more effective care for these patients, knowing when to treat and when to refer.

Earwax impaction was another major diagnosis at the GOPD in our study. It accounted for 17% of the total ENT patients during the study period. Although wax impaction occurred among all the age groups in this study, most impactions were found among young adults (16 – 35 years), accounting for 17% of various diseases found in that age group. Previous studies have reported wax impaction to be disproportionately more common in children and elderly Nigerians[16, 17]. Prevalence of wax impaction in USA was found to be 10% among children, 5% among healthy adult and up to 57% in older persons in nursing homes[16, 17]. Of the several methods employed for managing wax impaction, ear syringing is the most employed and most efficient method for removing ear wax[16]. Published studies have reported that majority of the syringing is done by nurses [16, 18, 19]. Safety and effectiveness of syringing depends on proper training, patience and particular attention to the technique of syringing as well as a good knowledge of the contraindications to syringing to make the procedure safe and cost effective[18, 19]. Adequate training of Nurses and the general duty doctors and family physicians in GOPD on syringing techniques will make most of cases of wax impaction to be treated at this level. Complexities of residencies in the teaching hospital that was reported to hinder patients' access to health care will be eliminated or reduced [20]. It will also minimize bureaucratic and unnecessary referrals and subsequently while making health care delivery more accessible, affordable and satisfying to the patient.

Another diagnosis that was common in our study was pharyngotonsillitis (10.6%). Pharyngotonsillitis is one of the most common infections encountered by the primary care physicians, including pediatricians and family physicians [21, 22]. The US Vital Health Statistics reported that acute pharyngotonsillitis is responsible for more than 6 million office visits each year by children younger than 15 years of age and an additional 1.8 million visits by adolescents and young adults aged 15 to 24 years[21]. Most cases of acute pharyngotonsillitis are attributed to infection with a respiratory virus and only small proportion is of bacterial etiology[22]. Published studies have reported that primary care physicians can accurately diagnose viral and bacterial pharyngotonsillitis [21, 22]. Although, viral pharyngotonsillitis may be mild, usually runs its course, it may be secondarily infected with bacterial organisms. Streptococcal pharyngotonsillitis remains a common illness especially in children and can lead to serious complications if left untreated. Recurrent pharyngotonsillitis on the other hand is usually secondary to infection from other foci especially the sinusitis. Adequate training will also equip the family physician to effectively manage primary cases of pharyngotonsillitis and to refer secondary cases for thorough otorhinolaryngologic evaluation and management. Efforts should also be made by the Otorhinolaryngologist to make treatment guidelines available to



the primary care and family physicians for effectiveness and uniformity regarding the management protocol and level at which referrals should be made.

Rhinosinusitis was the most common sinonasal disease seen in our study (11.8%). It is one of the most common conditions for which patients seek medical care and its subtypes include acute, subacute, recurrent acute and chronic, based on the duration of the disease [23]. Rhinosinusitis affects large numbers of patients globally and approximately 16% of the U.S. population reports a diagnosis of Rhinosinusitis annually, accounting for 16 million office visits[24]. Rhinosinusitis is a costly disorder, about \$2 billion is spent annually on medications to treat nasal and sinus problems and it is the fifth most common diagnosis for which an antibiotic is prescribed [24, 25]. Studies have shown that primary care practitioners are confronted by this disease on a daily basis [23, 25, 26] and Alan *et al.* [26] reported that family physicians play a critical role in the management of patients with rhinosinusitis, Monitoring for acute exacerbations of chronic rhinosinusitis, redirecting therapy when needed, supplying additional specialist referral, providing education and support to patients, and interacting with other specialists as part of a clinical care team can help improve the lives of patients with this chronic disease [26]. Certain diagnostic tools may be useful to the family physician[24]. For instance, the Canadian guidelines provide diagnosis and treatment approaches based on the current understanding of the disease and available evidence[26]. However, most clinicians agree that the most appropriate diagnostic approach is a good history and a thorough physical examination [24, 27 – 29].

Despite the fact that most patients with rhinosinusitis primarily presents to primary care physicians in Nigeria, most of them are sent to the Otorhinolaryngologist after initial assessment. Proper training of family physicians in the management of ORL patients, through adequate exposure especially during residency training, is therefore advocated. With such, they can offer relevant care to the affected patients and provide appropriate referral to those that will need further evaluation, to patients who have symptoms which worsen or fail to improve with medical treatment, or whose radiologic evaluation shows evidence of sinus disease [23, 30, 31]. The family physicians in our country will then be able to play a pivotal role in helping their patients with rhinosinusitis to proactively manage the disease as is obtainable in most developed countries [26].

## **Conclusion**

There is a high prevalence of ear, nose and throat disorders in Nigeria and the majority of them initially present to the family physician. Effective management of these common ENT conditions requires the acquisition of appropriate knowledge and skills and this is related to training. We recommend that family physicians undergo a more intensive practical training in Otorhinolaryngology during residency training. This is expected to improve the management of common ENT cases and proper patient selection for referral. It will also lessen the burden of the workload of the available otorhinolaryngologist.

## References

- [1] Hannaford PC, Simpson JA, Bisset AF, Davis A, McKerrow W and Mills R. The prevalence of ear, nose and throat problems in the community: results from a national cross-sectional postal survey in Scotland. *Family Practice* 2005; 22: 227–233.
- [2] Vasileiou I, Giannopoulos A, Klonaris C, Vlasis K, Marinos S, Koutsonasios I, Katsargyris A, Konstantopoulos K, Karamoutsos C, Tsitsikas A, Marinos G. The potential role of primary care in the management of common ear, nose or throat disorders presenting to the emergency department in Greece. *Quality in Primary Care* 2009; 17:145–8
- [3] Yojana S, Mehta K, Girish M. Epidemiological Profile of Otorhinolaryngological Emergencies at a Medical College, in Rural Area of Gujarat. *Indian J Otolaryngol Head Neck Surg.* 2012; 64(3): 218–224. doi: 10.1007/s12070-011-0293-8
- [4] Hijano R, Hernández A, Martínez-Arias A, Homs I, Navarrete ML. Epidemiological study of emergency services at a tertiary care center. *Acta Otorrinolaringol Esp.* 2009; 60(1):32-7.
- [5] Fasunla J, Ibekwe T, Adeosun A: Preventable Risks in the Management of Aural Foreign Bodies in Western Nigeria. *The Internet Journal of Otorhinolaryngology.* 2007 7(1). DOI: 10.5580/18fe
- [6] Perez Obon J, Rivares Esteban J, Leache Pueyo J et al. An outpatient study in ENT (otorhinolaryngology) emergencies at a general hospital. *Acta Otorrinolaringológica Española* 1995; 46:298–304.
- [7] Marinos G, Vasileiou I, Katsargyris A, Klonaris CP, Korombelis P, Michail O et al. Management of minor medical problems and trauma: the role of general practice. *Rural and Remote Health* **9**: 1019. (Online) 2009. Available: <http://www.rrh.org.au>
- [8] World Health Organization. Prevention of hearing impairment from chronic otitis media. Report of a WHO/CIBA foundation workshop, London 19 – 21 November 1996.
- [9] Ramakrishnan K, Sparks RA, Berryhill WE. Diagnosis and Treatment of Otitis Media *Am Fam Physician.* 2007 1;76(11):1650-1658
- [10] Acuin J, for the World Health Organization. Chronic Suppurative Otitis Media. Burden of Illness and Management Options. Geneva: World Health Organization, 2004. Accessed online July 23, 2007, at: [http://www.who.int/child-adolescent-health/publications/CHILD\\_HEALTH/ISBN\\_92\\_4\\_159158\\_7.htm](http://www.who.int/child-adolescent-health/publications/CHILD_HEALTH/ISBN_92_4_159158_7.htm)

- [11] Browning GG. Commentary: interpreting the evidence. *BMJ*. 2002; 325:1160.
- [12] Fisher EW, Pfleiderer AG. Assessment of the otoscopic skills of general practitioners and medical students: is there room for improvement? *British Journal of General Practice* 1992; 42:65–7.
- [13] Isaacson JE, Vora NM, Hershey MS. Differential Diagnosis and Treatment of Hearing Loss. *Am Fam Physician*. 2003 Sep 15;68(6):1125-1132.
- [14] Colin M, Andrew S, Marisol C. Global burden of hearing loss in the year 2000. *Global Burden of Disease, 2000*
- [15] Murray CJL, Lopez AD. *The Global Burden of Disease: A Comprehensive Assessment of Mortality and Disability from Diseases Injuries, and Risk Factors in 1990 and Projected to 2020*. Cambridge: Harvard University Press, 1996.
- [16] Adedeji T.O. Sogebi O.A, Bande S.A. EAR SYRINGING - Trends from a young ENT practice in Nigeria. *Natl J Med Res* 2013; 3(2): 126-129
- [17] Eziyi JAE, Amusa YB, Nwawolo CC, Ezeanolue BC. Wax Impaction in Nigerian School Children. *East and Central African Journal of Surgery*. 2011; 16( 2):40-45
- [18] Bird S. The potential pitfalls of ear syringing. Minimising the risks. *Aust Fam Physician*. 2003; 32(3):150-151.
- [19] Fox A, Bartlett P. Nurse-led ear care: training needs and the latest techniques. *Prof Nurse*. 2001; 17(4):256-258.
- [20] Diana N. Carvajal DN, Blank AE, Lechuga C, Schechter C, McKee MD. Do Primary Care Patient Experiences Vary by Teaching versus Nonteaching Facility? *J Am Board Fam Med* 2014; 27:239 –248. doi: 10.3122/jabfm.2014.02.130222
- [21] Erlichman M, Litt R, Grossman Z, Kahan E. Evaluation of the approach of primary care physicians to the management of streptococcal pharyngotonsillitis. *Isr Med Assoc J*. 2000; 2(2):169-73.
- [22] Brook I, Dohar JE. Management of group A beta-hemolytic streptococcal pharyngotonsillitis in children. *J Fam Pract*. 2006; 55(12):S1-11; quiz S12.
- [23] Aring AM, Chan MM. Acute Rhinosinusitis in Adults. *Am Fam Physician*. 2011 May 1;83(9):1057-1063.

[24] Fagnan L.J. Acute Sinusitis: A Cost-Effective Approach to Diagnosis and Treatment. *Am Fam Physician*. 1998 Nov 15;58(8):1795-1802.

[25] Martin D, Gerald AE, Paul KK, Erin D. Wrigh AK, Jacques B, Anthony C. Canadian Clinical Practice Guidelines for Acute and Chronic Rhinosinusitis. *Journal of Otolaryngology–Head & Neck Surgery*. 2011;40 (S2): S99 – S142. DOI: 10.2310/7070.2011.100321

[26] Alan Kaplan. Canadian guidelines for chronic rhinosinusitis. *Canadian Family Physician*. 2013; 59 (12) 1275-1281

[27] Williams JW, Simel DL, Roberts L, Samsa GP. Clinical evaluation for sinusitis. Making the diagnosis by history and physical examination. *Ann Intern Med*. 1992; 117:705–10.

[28] Lindboek M, Hjortdahl P, Johnsen UL. Use of symptoms, signs, and blood tests to diagnose acute sinus infections in primary care: comparison with computed tomography. *Fam Med*. 1996; 28:183–8.

[29] Van Duijn NP, Brouwer HJ, Lamberts H. Use of symptoms and signs to diagnose maxillary sinusitis in general practice: comparison with ultrasonography. *BMJ*. 1992; 305:684–7.

[30] Okuyemi KS, Tsue TT. Radiologic imaging in the management of sinusitis. *Am Fam Physician*. 2002;66(10):1882–1886.

[31] Fokkens W, Lund V, Bachert C, et al. EAACI position paper on rhinosinusitis and nasal polyps executive summary. *Allergy*. 2005; 60(5):583–601.