

ORIGINAL ARTICLE

IMPACT OF MULTIDISCIPLINARY TEAM APPROACH TO THE MANAGEMENT OF OTALGIA PATIENTS

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ABSTRACT

Background: Otolgia, one of the most common complain reported in OPD of otorhinolaryngologist, is agonizing and affects all age groups. The objective of the study was to highlight the use of Multidisciplinary team approach to the management of otalgia patients for speedy recovery.

Methods: A cross sectional study was conducted on patients having ear pain. These patients presented to the out-patient department (OPD) of otolaryngology of a tertiary care hospital. Data was collected through questionnaire prepared in advance. Informed oral consent was taken from participants before administration of the questionnaire.

Results: A total of 216 patients were included in the study. Out of these only 33(15.2%) were less than 18 years of age. Majority [139(64.35%)] of subjects belonged to a low socioeconomic class. Out of these patients 119(55.1%) had ear infections who has to be seen by otolaryngologists. 63(29.2%) of patients had temporomandibular joint pain, referred to the Maxillofacial Surgeons and 34(15.7%) of patients suffering from neck pain, referred to Orthopaedic Surgeon.

Conclusion: Multidisciplinary team approach was found effective in treating otalgia patients visiting the otorhinolaryngology clinics for the symptom, should be closely examined and referred to concerned departments if required for complete recovery.

KEYWORDS: Otolgia, Multidisciplinary team approach, Otolaryngology, Ear pain

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INTRODUCTION

Otolgia, commonly considered to be due to ear infection, is one of the common symptoms. In half of the patients visiting general practitioners, it is because of some underlying pathology. While most often linked to chronic debilitating diseases such as cancer, it is also important in other common diseases, including one of the most common causes of visits to an otorhinolaryngologist; Otitis Media (OM).^{1,2} OM affects an estimated 709 million people

yearly, and more than half (51%) of the patients are under five.^{3,5,14}

Otolgia is one of the most common features of Otitis Media.⁴

Otolgia might be primary (due to ear pathology) or secondary, referred from other causes, like temporomandibular joint dysfunction and neck pain, however neither the incidence nor prevalence is known.^{5,6} It can be safe to assume that it is a

common complaint to present to the otorhinolaryngology outpatient. And like all pain it is unpleasant and possibly disruptive for the patient. Because of the solitary presentation, sometimes it is misdiagnosed as primary otalgia when it can be of other reasons (secondary otalgia).⁷ For better management of otalgia a multidisciplinary team will be beneficial for the patients.

Along with potential day to day disruption occurring with otalgia, this research was designed to find out about the better management, risks and association of ear pain such as temporomandibular joint pain and neck pain with the proper referral to respective specialists.

METHODS

A cross sectional study was conducted on patients having ear pain. These patients presented to the out-patient department (OPD) of otolaryngology in the Dr. Ziauddin Hospital Kemari campus of Karachi. This hospital was selected due to large number of patients in OPD of otolaryngology since it is the only hospital that caters to the entire population of that area.

Our target population was patients who present with complain of ear pain. A sample size of n=216 patients was taken. This study was conducted in the month of July-August 2016.

Patients included in the study were those having ear pain due to any cause. Patients excluded from the study were those who were not willing to consent, and those having language barrier. Sampling technique employed was convenience sampling technique.

Data was collected through questionnaires and informed oral consent was taken from participants before administration of the questionnaire. They were asked about their ear pain, its duration, whether unilateral or bilateral, associated symptoms such as dizziness, vertigo, hearing loss, tenderness at temporomandibular joint and neck and the duration of the pain. The questionnaire also includ-

ed questions regarding the use of medicines for their presenting complaint and its associated symptoms if there were any. Some of the risk factors such as cleaning their ears with ear buds, sticks, keys and regular swimming were determined.

Data was analysed on SPSS version 20. All qualitative variables are presented as frequency and percentages and all quantitative variables are presented as mean and standard deviation. Chi-square test was used to find association between categorical variables. P-value less than 0.05 were considered as significant.

Informed consent was taken from participants before including them in the study. Also permission from administration of hospital and department of otolaryngology was taken before conducting the study in their hospital.

RESULTS

A total of n=216 patients were included in the study of which 130 (60.2%) were male and 85 (39.4%) were females. Out of these only 33(15.2%) were less than 18 years of age. Most of our sample population belonged to a low socioeconomic class that is 139(64.35%), which was determined from the area where they reside and their occupation.

When the patients presented to us in the outpatient department with complain of otalgia, a detailed history of pain was taken from them. It determined that 152(70.4 %) of the patients presented with in less than 7 days of pain. 170(78.7%) patients presented with unilateral ear pain while the rest had bilateral otalgia. The type of pain that patients described was almost equally divided with 112(51.9%) having dull continuous type of pain and the rest were having sharp intermittent pain, 109(50.46%) of the patients had moderate pain. The intensity of pain was asked from each patient and was graded as described below in table 1. In 63(29.2%) patients otalgia was associated with temporo-mandibular joint while for 44(20.4%) patients; pain was extended beyond and caused toothache.

Table 1: Percentage of patients and their severity of pain.

Number of patients	Severity of Pain	Grading on Pain scale	Percentage
63	Mild	1-3	(29.2%)
109	Moderate	4-6	(50.46%)
44	Severe	7-10	(20.4%)

Ear pain can have many associated symptoms with it and on further inquiring from the patients we determined that it was associated with ear discharge in 82(38%), 62 out of 82 had serous discharge. Some serious associated symptoms were found too that were affecting the patients with their daily lives. 105(48.6%) of the patients complained hearing loss, 149(69%) had trouble sleeping at night secondary to the neck pain while 38(17.6%) had decreased appetite due to the painful chewing.

When the patients were asked about the risk factors

for ear pain which includes swimming, surprisingly only 33(15.3%) of the patients said they were regular swimmers. In response to the use of any object to clean their ears, 120(55.6%) patients said that they either use cotton buds or keys to clean their ears regularly.

When examined, those patients who had primary otalgia were treated in the Otolaryngology department of Dr Ziauddin Hospital Kemari while those who had underlying pathology they were referred to the respective department as shown in table 2.

Table 2: Causes of otalgia and their referral to respective departments.

Number of patients (n=216)	Frequency in Percentage	Causes of Otagia	Referrals
119	55.1%	Ear Infections	Otolaryngology
63	29.2%	Temporomandibular joint tenderness	Maxillofacial Surgeon
34	15.7%	Neck pain	Orthopaedic Surgeon

DISCUSSION

Multidisciplinary approach is when healthcare professionals from different specialties work together to provide a patient with well rounded treatment keeping all of his/her signs and symptoms in mind.²² Otagia is usually considered to be the presentation of some infection inside the ear^{8,9} and most of the times it is treated as an infection which masks the root cause and can lead to serious and permanent ear pathologies therefore a detailed examination of the adjacent structures should be performed.⁸⁻¹⁰ So, we conducted a study to highlight the impact of multidisciplinary team approach on the better management of otalgia in terms of the root problem. In our study 15.7 % of the patients were referred to the Orthopaedic surgeon for their neck pain and 29.2% were referred to the Maxillofacial Surgeon for their Temporomandibular joint pain. The percentage of male patients in our study were higher (60%) compared to other studies. Of the 216 patients, only 33% were 18 years old or younger. Most of the researches done were on the pediatric patients, however our study shows that the otalgia is significant for all age groups with almost 183(85%) of our patients were greater than 18 years. The median age was also higher for our research which was 30 versus 25 in another study conducted in Europe in 2015.²⁴

A study conducted in University of Florida otolaryngology clinic determined that 97(45%) of patients had 2 days or less of school missed while our study determined that 73.6 percent of the patients reported 'less than 3 days of work/school missed¹¹ This can be due to the misdiagnosis of the root cause and this can be prevented by the consult of other specialists according to the respective associated pain.

In our study, a large number of cases with otalgia were found to be associated with hearing loss in 48.6% cases, whereas another similar study conducted in Europe had hearing loss associated with otalgia in only 2.5% of them.¹² Another study conducted in South Korea had a similar result to

ours with 35% association with hearing loss in otogenic otalgia.¹³ These differences however can be due to the difference in the primary disease causing otalgia and the extent to which the disease had spread before the presented to the outpatient clinic.

An association that can worsen the patient's symptoms is the Vertigo which was appreciated in 44.9% of cases in our study as compared to only 13.9% in another study conducted in South Korea. However frequency of discharge determined was similar in both studies with 38% in ours versus 34.6% in their study. The frequency of unilateral pain was also similar in both studies that was 78.7% in ours versus 83.7% in that study.¹³ This shows the seriousness of this symptom on the patients health and why it should be referred early to an otorhinolaryngologist as early as possible so that proper diagnosis can be made and appropriate treatment started.

A study conducted on otalgia in adult population of Finland determined that that 74% of otalgia patients had difficulty in falling asleep. This result is similar to our study which determined that 69% of patients had difficulty in sleeping due to otalgia.¹⁷ A study conducted in 2010 determined that secondary otalgia is more common in adults. Majority of our patients belonged to the adult group. Pathologies of cervical spine¹⁸ can present as secondary otalgia and sleep disturbances.^{15, 16}

Decreased appetite is reported to have a high sensitivity; it was found to have 36% sensitivity in acute otitis media patients in a review published from Oklahoma. However, in our study it was found to be present in only 17.6% of patients with otalgia. It is important to consider that there is a stark difference in both as the former is a disease while the latter is a symptom which can occur in many disease involving both the ear (primary otalgia) and from the pathology of the surrounding structures (e.g secondary otalgia due to temporomandibular joint pain).^{19,20,21,23} Our study determined that for 63(29.2%) , ear pain was referred to their temporo-mandibular joint while for (20.4%) 44 it extended

beyond and caused toothache. Therefore, patients complaining of otalgia with no pathology inside ear may need to be referred early to other departments like maxillofacial surgery and orthopaedic surgery to exclude any condition that may cause referred pain to the ear.

The limitation of our study was that our target population belonged to low socioeconomic group and had low literacy rate therefore the risk factors for otalgia and ear diseases were different than most of the other developed countries, a pre-defined proper questionnaire could not be used and we had to design our own according to most prevalent risk factors that were observed in our out-patient department. Due to low socioeconomic background and patients not being able to afford the investigation, they were unable to keep up with the follow up visits; hence, a proper diagnosis could not be reached. Because of this comparison with other studies worldwide was difficult. We still recommend that secondary otalgia should be referred to respective fields.

CONCLUSION

In this study, we have shown that otalgia doesn't necessarily arise from the ear but also can be secondary to ailments that originate from other locations in the body especially from problems in the cervical and temporo-mandibular region. This painful symptom can not only cause functional problems like low appetite and sleep disturbance but can also lead to permanent and possibly life threatening problems like hearing loss and vertigo respectively. Henceforth our study sheds a light on these issues by recommending that a multidisciplinary team approach including a maxillofacial surgeon and orthopaedic surgeon should be applied to investigate, manage and treat otalgia.

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