Bacteriological study of chronic suppurative otitis media among patients attending Tikrit Teaching Hospital for the year 2013

Israa Izalden Ibrahim
M Sc , Dept. of Microbiology, College of Medicine, Tikrit University.

Abstract

A total of 63 patients with CSOM were collected in this study during the period from January 2013 to September 2013 at the unit of ENT in Tikrit Teaching Hospital. The results of the bacteriological study of the 63 cases obtained from CSOM patients showed 39 (80.9%) were from children and 24 (38.1%) were from adults. Fifty-one samples (68.6%) were pure cultures had a single organism isolate and 12 samples (19.0%) showed no growth. The peak incidence of COSM among patients was occurred in age group (0-4) years Table (1).This study indicated that boys 34 (54.0%) showed higher rate of infection than girls 29(46.0%).The ratio of the present study was (1.7:1). The present study showed that the Gve – bacteria were 35(68.6%), Gve+ bacteria were16 (31.4%). Among the Gve- bacteria Ps. aeruginosa 19(30.2%)was the main causative organisms, while S. aureus 8(12.0%) was being the predominant organism among Gve+ bacteria. .Antimicrobial susceptibility test were done to all bacterial isolates. Ps. aeruginosa isolates showed high sensitive (89.5%) to amikacin and gentamicin, and the high sensitive rates of S. aureus isolates to same antibiotics were(87.5%) .The isolates of Ps. aeruginosa and S. aureus showed resistance to ciprofloxacin were 6(31.6%), 2(25%) respectively

Introduction

Chronic suppurative otitis media (CSOM) is defined as an infection of the middle ear that is lasts more than 3 months and is accompanied by tympanic membrane perforation(1). The CSOM most often occurs in first 5 years of life, and most common in developing countries in special populations such as children with craniofacial anomalies and in certain in racial groups(2). Chronic suppurative otitis media (CSOM) has assumed world-wide importance, So untreated cases can result in a broad range of complications, these may be related to the spread of bacteria to structures adjacent to ear or local damage in the middle ear itself(3). Most common microorganisms found in CSOM are Pseudomonas aeruginosa, Staphylococcus aureus, Proteus mirabilis, Klebsiella pneumoniae and Esherichia coli but these organisms vary in various geographical areas(1). Pathogenic bacteria have the ability to produce several types of virulence factors associated with their pathogenicity and major role in the causation of infection in otitis media (4). The aim of this study was to determine bacterial pathogens and their antimicrobial resistance profile isolated from CSOM cases among children and adults in Tikrit Teaching Hospital. It is concluded that chronic suppurative otitis media is still highly resistance in our country and affecting mainly children.

Patients and Methods

A total of 63 patients with CSOM were collected in this study during the period from January 2013 to September 2013 at the unit of ENT in Tikrit Teaching Hospital. The samples were collected with sterile swab sticks from

DOI: http://dx.doi.org/10.25130/mjotu.20.2.2

deep in the ear canal and the discharges were put into to Stuart transport medium and transported to the Microbiology Laboratory for analysis within 30 minutes after collection. Bacterial species were identified as per the standard microbiological method (5). Each discharge samples were plated on MacConkey Agar (Himedia), Nutrient Agar (Oxoid), Mannitol salt agar (Himedia), Blood Agar (Oxoid) and then incubated aerobically at 37°C for 24 hours. Also API identification system (bioMerieux. Basingstoke,UK) (6) was used to identify the isolates. Bacterial sensitivity of isolates to commonly used antimicrobials (amikacin, Ciprofloxacin, gentamycin, ampicillin, vacomycin, imipenem, piperacillin, ceftazidime, cefotaxime, naldixic acid and tobramycin) was done. Antimicrobial susceptibility tests were performed by using disc diffusion NCCLS guidelines(7).

Results

The results of the bacteriological study of the 63 cases obtained from CSOM patients showed 39 (80.9%) were from children and 24 (38.1%) were from adults. Fifty one samples (68.6%) were pure cultures had a single organism isolate and 12 samples (19.0%) showed no growth.

Table(1) shows that Pseudomonas aeruginosa 19(30.2%) was the most prevalent microorganisms isolated followed by Staphylococcus aureus 8(12.7%), Proteus mirabilis 6(9.5%) and E.coli 5 (7.9%).

The peak incidence of COSM among patients was occurred in age group (0-4) years, Table (1). This study indicated that males 34 (54.0%) showed higher rate of infection than females 29(46.0%). The ratio of the present study was (1.17:1). The present study showed that the Gve – bacteria were 35(68.6%), Gve+ bacteria were16 (31.4%). Among the Gve- bacteria Ps.aeruginosa 19(30.2%)was the main causative organisms, while S. aureus 8(12.0%) was being the predominant organism among Gve+ bacteria. .Antimicrobial susceptibility test were done to all bacterial isolates. Ps. aeruginosa isolates showed high sensitive (89.5%) to amikacin and gentamicin and the high sensitive rates of S. aureus isolates to same antibiotics were(87.5%) .The isolates of Ps. aeruginosa and S. aureus showed resistance to ciprofloxacin were 6(31.6%), 2(25%) respectively as show in the table(2). The low level of resistance 1 (16.6%) to gentamicin and ciprofloxacin showed by the third bacterial type Proteus mirabilis isolates in our study. Escherichia .coli isolates that gram-negative bacteria belong to Enterobacteriacae were indicated (100%) sensitivity to amikacin and ciprofloxacin. Overall, bacterial isolates indicated (66.6-100%) resistance to ampicillin drug whereas all isolates seemed their sensitivity to amikacin were (83.4-100%).

Discussion

Sixty three CSOM cultures were examined. Thirty nine (80.9%) of CSOM were from children and 24(38.1%) from adults obtained from hospital patients that resembles many previous studies. The study of Basrah reported (65.8%) were from children and (34.1%) were from adults (8), also Abera and Kibret rates were recorded (52.2%), from children, (47.8%) from adults (9), while Shamweel, in Saudi Arabia found (28.0%), (72.0%) from children and adults respectively, his results was disagreed with the present study (3). The present study showed that the peak incidence of CSOM among patients was occurred in age group (0-4) years (Table 1), the present study similar to results obtained from Abera and Kibret that the peak incidence was documented in age group (0-4) years(9).

Other findings reported high prevalence of CSOM among patients was especially in age group (1-3) years (10), on the other hand a previous study by Alabbasi reported that the peak was (1-9) years (8),while the Saudian investigators were found the peak higher among young children up to four years and lower in age group (8-12) years (11).

This study indicated that males 34 (54.0%) showed higher rate of infection than females 29 (46.0%). The ratio of the present study is (1.17:1) it is nearly to ALsaimary`s results was ratio (1.2:1) (12). Against to our study the research done by Abera and Kibert have reported a females predominance (9). Both gram negative and positive bacteria are responsible for infection of the CSOM, the prevalence gram negative bacterium was greater than gram positive bacterium. The present study showed that the Gve– were 35 (68.6%), Gve+ were16(31.4%). Among the Gve- bacteria Ps. aeruginosa 19 (30.2%) was the main causative organism, while S. aureus 8 (12.0%) was being the predominant organism among Gve+ bacteria, our study gose with various studies that documented the predominance Ps. aeruginosa and the second type of bacteria was S. aureus isolated from CSOM (2,3,4,13,14). On the other hand the study in central India showed that Ps. aeruginosa (43.02%) and S. aureus (23.10%) were the predominant isolates in all three years associated with CSOM(15). In the previous investigation from Miami university they demonstrated that Ps. aeruginosa is able to enter and survive inside human middle ear epithelial cells via an uptake mechanism that is depended on microtubule and actin microfilaments pathway(13). In contrast other findings done in Saudi Arabia and Iran, stated the most common dominant isolates were S. aureus, followed by Ps. aeruginosa (2,3). Other isolates were P. mirbalis (9.5%), E.coli (7.9%) and Streptococcus spp (6.3%), they are being relatively closed to that research done in Kerman in Iran(2). However various studies have reported its Streptococcus spp isolation from cases of CSOM (1.43% to 5.4%)(15). Very low isolation rates (4.8%) we were obtained from Enterobacter spp, S.epidermidis, and (3.2%)(1.6%)were from, Kelbseilla and Enterococcus spp respectively. The study from Hilla Teaching Hospital in Iraq 2007 was detected the most common isolates (Ps. aeruginosa, K. pneumoniae and S. pneumoniae) (16). Antimicrobial sensitivities of Ps. aeruginosa and S. aureus isolates were done to amikacin and gentamicin, Ps. aeruginosa isolates showed high sensitive (89.5%) to both antibiotics and the high sensitive rates of S. aureus isolates to same both antibiotics were (87.5%). The study from Saudi Arabia was indicated, that susceptibility pattern of Ps. aeruginosa and S. aureus isolates showed high rates sensitive to gentamicin, (91%), (82%) respectively while the study from India 2014 showed little low rates than our research (65%), (80%), in the same findings, we noted Saudi finding showed moderate sensitive to amikacin (78.1%),(78.4%) of Ps. aeruginosa and S. aureus, while Indian finding showed high sensitive (85%), (87%) of Ps.aeruginosa and S. aureus isolates to amikacin (3,17). However we were noted that Pseudomonas aeruginosa were sensitive to amikacin and gentamicin and it is also supported by previous studies in India (17) and, while the study done by Khan in Pakistan disagreed with our study (1). As Table (2) shows, that isolates of Ps.aeruginosa and S. aureus showed resistance to ciprofloxacin were 6(31.6%), 2(25%) respectively. In comparison our results with results done by Asaimary of the previous study in Basrah in 2010 we note contradictory rates for resistance of Ps. aeruginosa isolates (25%), and S. aureus

isolates (42.85) to ciprofloxacin (12). The resistance to fluoroquinones is basically a reflection to mutation which is a result of selective pressure created by the use of it (18). The third bacterial type isolates in our study were proteus merabilis isolates that showed1(16.6%) low level of resistance to gentamicin and ciprofloxacin, it was relatively approach to results were done by Abera-kiber from Ethiopia in 2011 that demonstrated the Proteus spp were the first common isolates in their finding(9). Other gram negative isolates belong to Enterobacteriacae were E.coli, Klebseila spp and Enterobacter spp which indicated (100%) sensitivity to amikacin and ciprofloxacin, the rates of sensitivity were approach (50-85.7%) to previous study done by Sudhindral et al in India in 2014(14). Other gram positive bacteria i.e. S. epidermidis and Streptococcus spp were seemed (25-75%) susceptibility for all antibiotics, in a comparison with previous study from India that have reported their rates sensitive isolates to antimicrobial tested were (75-100%), their results a little higher from our study(14). Low number of Streptococcus spp isolates were in our study that showed various resistance to antimicrobial tested. For instance 3(75%) of streptococcus isolates showed resistance to vancomycin and ampicillin. Only one enterococcus spp isolate was found in present study and appeared (100%) resistance to vancomycin, however an important problem now in hospitals the emergence of resistance enterococci (VRE) (19). Chronic suppurative otitis media is still highly resistance in our country and affecting mainly children. Hence where possible and available, susceptibility test should guide the management of CSOM in this country

References

1. Iqbal Khan M I, Satti L. Microbiology of chronic suppurative otitis media experience at Dera Ismal Khan. Gomal Journal of Med. Sciences 2011; 9, No.2.189-5.
2. Nia K M, Sepehri G, Khatmi H, Skakibaie MR. Isolation and Antimicrobial Susceptibility of Bacteria from chronic suppurative otitis media patients in kerman, Iran.Iran Red Medi J 2011; 13(12): 891-894.
3. Ahmad S. Antibiotics in chronic suppurative otitis media: A bacteriological study. Egyptian Journal of Ear, Nose, Throat and Allied Sciences 2013; 14: 191-194.
4. Razzak M S, Muhsin M A, Khazal N, Alwaeli K H. Study of some characteristics of bacteria isolated from patients with otitis media in Babylon province 2009; 6-No2.
5. Cheesbourgh M.Medical Laboratory Manual For Tropical Countries 2nd edition:England :Butterw worthr-Heineman LTD 1991:114-116.
6. Dortel L, Legraned P, Soussy CJ, Cattoir V. Bacterial identification, clinical significance, and antimicrobial susceptibilities of Acinetobacter ursingii and Acinetobacter schinedleri, two freque ntly misidentified opportunistic pathogens.JClin Microbial 2006; 44:4471-8[17050816][http:// dx. doi. /10.1128/JCM.01535-06].
7. Zapantis A, Lacy MK, O` Neal B, Couldry R. Nationwide antibiogram

analysis using NCCLS. M39-A guidelines.JClin Microbiol 2005; 43:2629-34.[15956376][http;//dx.doi..org /10.1128/JCM.43.6.2629-2634.

8. Alabbasi A M, Alsaimary I E, Najim J M. Prevalence and patterns of chronic suppurative otitis media and hearing impairment in Basrah city.J.Med.Sci 2010 ;1(4):129-133.

9. Abera B, Kibret M. Bacteriology and Antimicrobial susceptibaility of otitis media at Dessie Regional Health Research laboratory ,Ethiopia. Ethiopia J. Health Dev 2011;25(2):161-167.

10. Naji S S, Al-yasari H F, Hassan S C. Aural Myiasis associated with chronic suppurative otitis media among Hilla children. College of medicine, University of Babylon. Repository. Uobabylon.edu.iq/journal-vei University of Babylon journals.

11. Zakzouk S M, Jamal T S, Daghistani K J. Epidemiology of acute otitis media among Saudia children. International Journal of pediatric otorhenolarngology.2002, .62(3):219-222.

12. Alsaimary I E, Alabbasi A M, Najim J M. Impact multi drugs resistant bacteria on the pathogenesis of chronic suppurative otitis media. Afr. Microbial. Res 2010; 4(13).1373-1382.

13. Mittal R, Grati M, Gerring R, Blackwelder R, Yan D, Dony Li J, Zhong Liu X. In Vitro in teration of pseudomonas aeruginosa with human middle ear epithelial cells. 2014; VVol q. Issue 3.eq 1885. PLOS ONE/WWW.plosone.org.

14. Sudhindra K S (etal), Venkatesh V N, Nirmala Grace B, Ravish Kumar M, Shwetha D C. Bacteriological profile of chronic suppurative otitis media in a tertiary care center in South India, Journal of Biomedical and pharmaceutical Research 2014; 3(2):05-08.

15. Tyagi V, Deotale V, Gray D, Malgonde M. Bacteriological aetiology of chronic suppurative otitis media: an institutional workup in central India. Annual Journal of otolaryngology , head and neck 2013;.21:13. 2321-8428.

16. Razzak M S, Muhsin M A, Khazal N, Alwaeli K H. Study of some characteristics of bacteria isolated from patients with otitis media in Babylon province 2009; 6-No2.

17. Malkappa S K, Kondapaneni S, Surpam RB, Chakravti T K. Study of aerobic bacterial isolates and their antibiotic susceptibility pattern inchronic suppurative otitis media .Indian J Otol.2012;18: 136-9.

18. Sheng W H, Chen Y C, Wang J T, Chang S C, Luh K T, Hsieh W C, Emerging floroquinolone-resistance for common clinically important gram negative bacteria in Taiwan. Diagn Microbial Infect Dis 2002; 43:141-7.

19. Ahmed A A and Pryzygodski R M. Pathology exam review.Wolter Kluwer / Lippincott Willians and Wikins 2009;PP:14-74.

Table 1: distribution of isolated bacteria according to age groups and sex

Age(yrs)	sex	*S.epidermidis*	*S.auerus*	*Proteus mirabilis*	*Pseudomonas aeruginosa*	*Enterobacter* spp	*Keliebseilla pnemoniae*	*Sterptococcus* spp.	*Enterococcus* spp.	*E.coli*	No growth
0-4	F (n=6)	1	0	1	1	0	1	1	0	0	1
	M(n=8)	0	2	0	2	1	0	1	0	2	0
5_9	F (n=7)	0	1	1	2	0	0	0	0	1	2
	M(n=8)	1	0	1	2	0	1	1	0	1	1
10_14	F (n=3)	1	0	0	1	0	0	0	1	0	0
	M(n=2)	0	0	0	1	1	0	0	0	0	0
15-18	F (n=2)	0	1	0	1	0	0	0	0	0	0
	M(n=3)	0	1	1	0	0	0	0	0	0	0
pediatric (n=39)		3	5	4	11	2	2	3	1	4	4
19-44	F (n=7)	0	2	0	2	0	0	1	0	1	2
	M(n=9)	0	0	1	2	1	0	0	0	0	4
>44	F (n=4)	0	1	0	2	0	0	0	0	0	1
	M(n=4)	0	0	1	2	0	0	0	0	0	1
Adults(n=24)		0	3	2	8	1	0	1	0	1	8
Total (n=63)		3 (4.8)	8 (12.7)	6 (9.5)	19 (30.2)	3 (4.8)	2 (3.2)	4 (6.3)	1 (1.6)	5 (7.9)	12 (19.0)

Table 2: Results of antibiotic sensitivity testing of isolated bacteria (n=63)

Antimicrobial agent	*S.epidermidis* (n=3)		*S.aureus* (n=8)		*Streptococcus* Spp. (n=4)		*Enterococcus* Spp. (n=1)		*E.coli* (n=5)		*Enterobacter* spp. (n=3)		*K.pneumoniae* (n=2)		*Pr.mirabilis* (n=6)		*Ps.aeruginosa* (n=19)	
	No.	R %	No.	R %	No.	R %	No.	R %	No.	R %	No.	R %	No.	R %	No.	R %	No.	R %
Amikacin	3	0	1	12.5	4	0	1	0	5	0	3	0	2	0	1	16.6	2	10.5
Torbamycin	3	0	1	12.5	1	25.0	1	0	1	20.0	3	0	2	0	1	16.6	2	10.5
Imipenem	3	0	4	50.0	1	25.0	1	0	1	20.0	3	0	2	0	1	16.6	2	10.5
Piperacillin	1	33.3	2	25.0	2	50.0	1	0	2	40.0	1	33.3	2	0	2	33.3	6	31.6
Ceftazidime	1	33.3	3	37.5	2	50.0	1	0	2	40.0	1	33.3	2	0	1	16.6	5	26.3
Ampicillin	3	100	6	75.0	3	75.0	1	100	4	80.0	3	100	2	100	4	66.6	15	78.9
Cefotaxime	1	33.3	5	62.5	1	25.0	1	0	4	80.0	1	33.3	2	0	6	0	5	26.3
Ciprofloxacin	1	33.3	2	25.0	1	25.0	1	0	1	0	3	0	1	0	1	16.6	6	31.6
Naldixic acid	1	33.3	1	12.5	2	50.0	1	0	2	40.0	1	33.3	1	50.0	2	33.3	4	21.1
Gentamicin	3	0	1	12.5	1	25.0	1	0	1	20.0	1	33.3	2	0	1	16.6	2	10.5
Vancomycin	2	66.6	3	37.5	3	75.0	1	100	ND		ND		ND		ND		ND	

ND: note done

Familial tendency of tonsillitis in patients undergoing tonsillectomy surgery

Saman Fadhil Jamal MBChB,FICMS
Department of surgery/College of Medicine/Kirkuk University

Abstract

Background: Tonsillitis is the commonest otolaryngological infection and many patient will end with surgery in the form of tonsillectomy which is till now one of the oldest and commonest operation done all over the world. The main indications for tonsillectomy are (recurrent infections, obstructive sleep apnea and peritonsillerabscess) and there's no documentation about the familial tendency of tonsillitis

The aim of the this research is to establishment the association of family history as risk factors for developing tonsillitis and to study how it influences the decision of surgery.

Patient and Methods: This is a cross-sectional study that has been done from the beginning of October 2013 to the 25th of 25th of March 2014at Azadi Teaching Hospital and Kirkuk hospital. The study involved 200 patients who underwent tonsillectomy (case)as an indicator of patients having tonsillitis and 200 person not having any known criteria of tonsillitis (control). All patients were evaluated using history regarding (Family history , chronic disease, sinusitis and allergy)

Results and discussion :A total of 200 patients underwent tonsillectomy during the time period of the study. There were 98 male (43.4%) and 102(56.6%) female with mean age of (7) years and range in age from 3 to 12 years old .The family history was positive in (80.5%) in case group in contrast to (18.5%) in control group,The results of this study were compared with the control cases of the study itself and the studies of other researches,demonstrate that family history is a risk factor for recurrent tonsillitis.

Conclusion and Recommendation : From this study, it be concluded that the presence of family history is a risk factor although there's no role of genetic predisposition to explain this result so we should spread awareness about tonsillitis, the proper antibiotic, adequate course of treatment and the adequate dose which are the mainstay of the prevention of the recurrent of tonsillitis thus reducing the complication and avoiding surgery .

Keywords: Familial tendency, tonsillitis, tonsillectomy

Introduction

Tonsils are collections of lymphoid tissue facing into the aerodigestive tract. The set of lymphatic tissue known as Waldeyer's tonsillar ring includes the adenoid tonsil, two tubal tonsils, two palatine tonsils, and the lingual tonsil. [6]

Tonsillitis: It is inflammation of the tonsils most commonly caused by viral or bacterial infection. When caused by a bacterium belonging to the **group A streptococcus,** it is typically referred to as strep throat

The overwhelming majority of people recover completely, with or without medication. In 40%, symptoms will resolve in three days, and within one week in 85% of people, regardless of whether streptococcal infection is present or not.[9]

Tonsillectomy: It's complete removal of tonsil tissue, The procedure is extremely important since the tonsil are the first line of defense mechanism in the body so it's essential that patient who do the surgery for tonsillectomy meet the criteria of it. It's one of the oldest operation that have done over years ,in fact tonsillectomy is a 3,000-year-old surgical procedure in which,traditionally, each tonsil is removed from a recess in the side of the pharynx called the tonsillar fossa.

The indication of the surgery never mention the familial tendency as risk factor but the surgeons have noticed that most of the cases that underwent tonsillectomy have family history with tonsillectomy.So the family history , other infections and allergy may predispose the patient to surgery.[4]

The familial tendency for tonsillectomy may be misleading in that genetic factors are responsible for this relationship but yet no genetic factor has been discovered to has a role in this , actually it may be the nutritional , diet, hygiene and other factors that play important role rather genetics , [5]

One of the important factors that most of the patients that have done tonsillectomy are unfamiliar with the proper way to treat tonsillitis, indeed a lot of simple (uncomplicated) tonsillitis with wrong way of drug administration lead to complicated condition and recurrent infection are still the main indication for surgery.

Aims of the research

1- To identify if there's a correlation between having a positive family history of tonsillectomy surgery and the risk for developing tonsillitis with subsequent tonsillectomy and to know if family history of tonsillectomy surgery is

really a risk factor for the patients with tonsillitis to worth tonsillectomy.

Patients and Methods

This is a cross sectional study that has been started from the beginning of October 2013 to the 25th of march 2014 in the department of otolaryngology at both Azadi Teaching Hospital& Kirkuk hospital in Kirkuk city. The study involved 200 patients who underwent tonsillectomy (case) and 200 person who did not have tonsillitis (control). All patients were evaluated using full history including family history of tonsillectomy, sinusitis , allergy , and chronic disease according to a questionnaire form prepared for this purpose

The criteria for inclusion of patients in the study was as follows:

Cases: They had tonsillectomy during the time of study as an indicator of those patients with tonsillitis fulfilling criteria needed to warrant surgery.

Control: They had no tonsillitis and not fulfilling any criteria of patients with recurrent tonsillitis .

Data as age, sex, date of doing the surgery for the cases of tonsillectomy and having family , degree of family history and other chronic disease were obtained from the patients themselves.

Both cases and controls were categorized according to family history of tonsillectomy surgery into three groups:

1-First degree relatives: Involving mother,father,brothers,sisters and/or children.

2-Second degree relatives: Involving unkles,aunts,grandfather,grandmother and/or grandkids.

3-Third degree relatives: Cousins and/or nephews

Statistical analysis were carried out by using (2x2 Chi square) as a test of significant ,

Results

A total of 200 patients underwent tonsillectomy during the time period from the beginning of October 2013 to the 25th of march 2014. 98 (43.4%) were male and 102(56.6%) female , as shown in table (1).The family history is positive in (80.5%) in patients done tonsillectomy in contrast to (18.5%) in control group, as shown in table (2).

The first degree relatives were 43(21.5%) in case group in contrast to7 (3.5%) in control group, as shown in table(3).The second degree relatives were 19 (9.5%) in case group in contrast to 8(4%) in control group. As shown in table (3)The third degree relatives were 28(14%) in

case group in contrast to 13(6.5%) in control group, As shown in table (3)

Discussion

Tonsillitis is the commonest otolaryngological problem especially in children and although there are many known causes for the disease, family history has been noticed as a risk factor in spite of no clear genetic predisposition for it so our study tries to strengthen the idea of familial tendency and its correlation with the patents' degree of family relation.Regarding the number of female patients who underwent the surgery in comparison to male patients there was no significant difference as sex regarded, reflecting that there is no sex group predisposed for tonsillitis more than other.There was significant difference between those patients underwent tonsillectomy with positive family history of the surgery compared to those with no history of tonsillitis suggesting that family history of tonsillectomy is a real risk factor for the patient to get the disease and subsequent surgery and the results are compared with the study of (day case tonsillectomy in children) that was done in Al-Kindy medical college at Baghdad city in 2002 ,in which tonsillectomy in identical/non identical twin are reviewed showed that family history were positive in 78% in a total of 500 patients underwent tonsillectomy [11] .

Family history in first degree relatives showed higher incidence than second and third degree relatives which may be due to closer relation of fathers and mothers to their children than unkles,aunts,cousins and nephews.

Conclusions

1. From this study , it can be concluded that the presence of family history is a risk factor although there's no role of genetic predisposition to explain this result but the life style, nutritional habits' hygiene and the misuse of antibiotic to treat tonsillitis all play role in explaining why tonsillitis runs in the family.
2. We recommend to spread awareness about tonsillitis, its causes, the proper antibiotic , adequate dose and the course of treatment, are the mainstay of the prevention of recurrent tonsillitis thus reducing the complication and avoiding surgery .
3. Detect the risk group for tonsillitis (patients with positive first degree relative , allergic and patients with sinusitis) and give them special attention and medical care to avoid complication, recurrent infection and subsequent tonsillectomy.

4. Making advanced researches about the possibility of a genetic association with tonsillitis.

References

1. MarcelleMacnamara, Acute and chronic pharyngeal infection.In:Michaelglesson.editor:Scot-Browns of otolaryngology, head and neck surgery.7th ed.GreatBritain.Edward Arnold.2008;2: part15,Chapter 152:1991-96.

2. Kramer SP, Pasha R. (2005). Otolaryngology: Head and Neck Surgery--A Clinical & Reference Guide, Second Edition. Plural Publishing. Lee KL. (2008).

3. McGraw-Hill Professional. Montgomery WR.(1996): Surgery of the Upper Respiratory System .Essential Otolaryngology Head and Neck Surgery, Ninth Edition.PP307-368.

4. Kristensen K. Tveterastonsillectomy .A retrospective study of 1150 operations, Clinical Otolaryngology & Allied Sciences Volume 9 Issue 6, Pages 347 – 350.

5. Beasley, P.; Anatomy of the Pharynx and Esophagus; In: Scott-Brown's Otolaryngology; (1997); edited by Michael Gleeson; London; Butter worth; Sixth edition; Vol. (1); Pp. (1/10/23-26).

6. Weir, N.F.; Clinical Interpretation of Tonsillar Size; Journal of Laryngology and Otology; (1972); 88; (1137-1144).

7. Maran, A. G. D.; The Nose, Tonsils and Adenoids; In: Logan Turner's, (Diseases of the Nose, Throat and Ear); (1988);edited by Maran, A. G. D. ; London; WRIGHT; Tenth edition; Chapter 1.1; Pp.(3-12).

8.Snell, Richard S.; The Head and Neck Anatomy; In: Snell Anatomy; (2010)Boston/Toronto; Little; Brown and Company; Third edition; Pp. (848-849).

9. SumanGolla,Tonsillectomy,In Eugene N.Myers Operative otolaryngology Head and Neck surgery. Copyright 2008, 1997 by Saunders; 1,Chapter23: 196-97.

10. Bailey and Love's: short practice of surgery.Head& neck surgery_Otalaryngology.Tonsillitis, tonsillectomy.

11. Ahmed Humadi: day case control: medical journal of Alkindy college 2002 ,Pp.(57-60)

12.Ammar H Khammas.: Hypertrophied Tonsils in Patients with Chronic Tonsillitis Selected for Tonsillectomy , Journal medical college /Mustanciriya university 2010, Pp(96-100)

Table (1): Percent distribution of study sample by sex among cases of tonsillectomy and control .

Sex	Case		Control		Total
	No.	%	No.	%	
Male	92	46%	100	50%	192
Female	108	54%	100	50%	208
Total	200	100%	200	100%	400

x^2=0.641 d.f=1 P value<0.01=significant

Table (2): Percent distribution of family history among cases of tonsillectomy and controls.

Family History	Case		Control		Total
	No.	%	No.	%	
Positive	161	80.5%	37	18.5%	198
Negative	39	19.5%	163	81.5%	202
Total	200	100%	200	100%	400

x^2=153.77 d.f=1 P value <0.01=significant

Table(3): Percent of distribution according to degree of relatives among cases of tonsillectomy and controls.

1st degree relative	Case		Control		Total	x^2	d.f	P value
	No.	%	No.	%				
Positive	43	21.5%	7	3.5%	50	29.622	1	>0.05
Negative	157	78.5%	193	96.5%	350			
Total	200	100%	200	100%	400			
2nd degree relative	**Case**		**Control**					
	No.	%	No.	%				
Positive	19	9.5%	8	4%	27	4.803	1	>0.05
Negative	181	90.5%	192	96%	373			
Total	200	100%	200	100%	400			
3rd degree relative	**Case**		**Control**					
	No.	%	No.	%				
Positive	28	14%	13	6.5%	41	6.114	1	>0.05
Negative	172	86%	187	93.5%	359			
Total	200	100%	200	100%	400			