

Acute Group A Streptococcal Tonsillopharyngitis in Children

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ABSTRACT

This study conducted at Alkhansa hospital which is maternity and children hospital in Ninavah province in Iraq to assess the (accurance, percentage, effect of age ,sex ,main presenting symptoms of acute group A streptococcal tonsillopharyngitis among hundred child with acute pharyngitis visiting the out patient of the hospital .there were 65 boys and 35 girls and their age range was 3-14years .Children with lower respiratory tract infection and those with acute pharyngitis who were receiving antibiotics were excluded from the study .History of the illness was obtained from the family of the patient .Throat swab was taken from each patient .swab was taken from each patient. Group A: streptococcal infection was isolated from 34% of the patients of acute tonsillopharyngitis 45% of the patients with group Streptococcal (18 patients) were 6-8years old ,it is more common in school aged ,there was no sex difference among our patients with group A streptococcal infection .the commonest presenting symptoms were fever, dysphagia ,and sore throust and the commonest signs were tonsillopharyngitis erythema, exudates and tender anterior cervical lymphadenopathy .No growth or growth of normal flora found in 56% of cases .This study advice parents strongly to give full ten days course of antibiotic therapy when group A streptococcal bacteria isolated parents also should be advised for prompt medical seeking and close follow up of their children who are at high risk to developing group A streptococcal pharyngitis.

Key wards: Acute tonsillopharyngitis, children.

INTRODUCTION

Acute tonsillopharyngitis refer to any of the numerous inflammatory conditions involving the pharynx⁽¹⁾.

Acute tonsillopharyngitis is generally caused by viral agents like Adeno viruses, Entero viruses, Herpes viruses, Epstein-Barr virus and Influenza viruses⁽²⁾.

Group A beta-hemolytic streptococcus (GAS) is the only common bacterial causative agent⁽³⁾. Less common non-group A beta-hemolytic streptococci particularly group C and G,Neisseria gonorrhoea, Corynebacterium diphtheriae, Mycoplasma and Haemophilus influenzae⁽⁴⁾. Acute Streptococcal tonsillopharyngitis has the highest incidence in children younger than 10 years. Symptoms may vary widely from very mild to sever. Fever, sore throat headache, malaise, Nausea and vomiting are the commonest presenting symptoms⁽⁵⁾. Clinical diagnosis may be confirmed by culture of the throat swab or by rapid detection method for streptococcal antigen⁽⁶⁾.

Cultures taken with cotton swab. The plate is incubated at (36°C) for 24 hours and observed for characteristic white-gray colonies 1 mm in diameter and surrounded by a broad clear zone of hemolysis⁽²⁾. Antigen detection test should not be substituted for office cultures in the diagnosis of group A streptococcal throat infection⁽⁷⁾.

Streptococcal antibody test is of no immediate value in the diagnosis and treatment of acute streptococcal tonsillopharyngitis⁽⁸⁾.

Treatment

The treatment of choice for streptococcal pharyngitis is oral penicillin V (250mg) given 3 times daily for 10 days⁽⁹⁾. Erythromycin is general effective in acute GAS pharyngitis⁽¹⁰⁾.Cephalosporin's such as cephalexin also may be used to treat streptococcal pharyngitis⁽¹¹⁾.

Aims of the Study

The aim of the study is to assess the occurrence, percentage, effect of age, sex, main presenting symptoms of acute group A streptococcal tonsillopharyngitis among children with acute pharyngitis.

Patients and methods

One hundred patients with acute pharyngitis visiting the out patient of Al-Khansa' pediatric hospital were studied. There were 65 boys and 35 girls and their age range was 3-14 years. Children with lower respiratory tract infection and those with acute pharyngitis who were receiving antibiotics were excluded from the study.

History was obtained from the family of the patients. Each patient was examined for the presence of tonsillopharyngeal erythema, tonsillopharyngeal exudate, abdominal tenderness, cervical lymphadenitis and full systemic examination was also done. A throat swab was taken from each patient using a sterile cotton swab which then send to the microbiology lab. immediately where it was inoculated on blood agar, MacConky and chocolate agar and the results were obtained after 3 days for both culture and drug sensitivity.

ASO titer was not done because it has no value in the immediate diagnosis and in treatment of acute pharyngitis.

RESULTS

Table 1: Distribution of throat culture results among patients with acute pharyngitis according to age:

Patients age (years)	Throat culture results					
	GAS		No growth or growth of normal flora		Other bacteria	
	No.	%	No.	%	No.	%
3-5 (n = 32)	7	21.78	22	68.75	3	9.37
6-8 (n = 40)	18	45.0	18	45.0	4	10.0
9-11 (n = 20)	7	35.0	11	55.0	2	10.0
12-14 (n = 8)	2	25.0	5	62.50	1	12.50
Total (100)	34	34%	56	56%	10	10%

Table: Sex distribution of GAS tonsillopharyngitis

Patient age	Male patients with GAS		Female patients with GAS		P-value
	No.	%	No.	%	
3-14	19	55.88	15	44.11	Not significant
Total 100	65		35		

Table 3: Correlation between symptoms of acute pharyngitis and throat culture results

Patients symptoms	Throat culture results						
	GAS		No growth or growth of normal flora		Other bacteria		P-value
	No.	%	No.	%	No.	%	
Fever	32	94.11	50	89.28	7	70	N. S.
Dysphagia	31	91.17	35	62.50	3	30	<0.001
Sore throat	26	76.47	30	53.57	5	50	<0.02
Coryza	7	20.58	10	17.8	3	30	N. S.
Abdominal pain	7	20. 58	7	12.50	2	20	N. S.
Nausea and vomiting	3	8.82	-	-	-	-	N. S.
Diarrhea	-	-	8	14.28	-	-	<0.001
Total (100)	34		56		10		

Table 4: Correlation between signs of acute pharyngitis and throat culture results

Patients signs	Throat culture results						
	GAS		No growth or growth of normal flora		Other bacteria		P-value
	No.	%	No.	%	No.	%	
Tonsillopharyngeal erythema	34	100.00	56	100.00	10	100.00	-
Tonsillopharyngeal exudate	20	58.82	11	19.64	3	30.0	<0.001
Cervical lymph node tender	9	26.47	2	5.88	1	10	<0.02
Not tender	15	44.11	13	23.21	2	20	<0.05
Soft palate petechiae	10	29.41	-	-	-	-	<0.001
Abdominal tenderness	2	5.88	3	5.35	-	-	N. S.
Rash	-	-	-	-	-	-	-
Total (100)	34		56		10		

DISCUSSION

GAS was isolated from 34 (34%) of the patients of acute tonsillopharyngitis. The result assess with Stjernquist-Desatnik et al⁽¹²⁾, Putto-Ain 1987⁽¹³⁾ and Mark D Widome⁽⁸⁾ who their study showed that GAS was encountered in (37%), (31%) and one third of their patients with tonsillopharyngitis, respectively.

Firas Mohammed Jamil isolated GAS from (24%) of patients with acute pharyngitis⁽¹⁴⁾.

Age:

Forty-five percent of the patients (18) were 6-8 years old in our study, also Mark D Widome showed that 50% of his patients were 6-8 years old⁽⁸⁾, and Putto-A found that most of his patients were 6 years old⁽¹³⁾, but Michell M. Cloutier found that GAS was mostly isolated in those patients who are 5-15 years old⁽¹⁾. So GAS is more common in school aged and less common in pre-school children.

Sex:

There was no sex difference in our patients, also Michael E. Pichochero et al. showed no significant sex difference in GAS pharyngitis⁽¹⁶⁾.

Clinical manifestation

The commonest presenting symptoms were fever in 32 (94.11%), dysphagia in 31 (91.17%), and sore throat in 26 (76.47%).

Mitchael E. et al. in their study found that sort throat in (99%), fever in (84%) and headache in (42%) were the commonest presenting symptoms⁽¹⁶⁾.

Jamil M. F. also found that the commonest presenting features were: fever (91%), sore throat in (88%) and dysphagia in (73%) in his patients⁽¹⁵⁾, but Kreher-NE, et al. found that abdominal pain and vomiting were found in (27%) and (14%) of their study, respectively⁽¹⁷⁾.

Edmond-KM in their study in 1996 at streptococcal pharyngitis in a pediatric emergency department found that tender cervical lymph node, absent coryza and scarlatiform rash were significantly associated with GAS pharyngitis in four years old children and above⁽¹⁸⁾.

The commonest signs were tonsillopharyngeal erythema in 34 (100%), tonsillopharyngeal exudate in 20 (58%) and cervical lymph adenopathy (tender and not tender) in 15.9 (44% and 26.47%), respectively where as James D. Cherry said that the commonest signs in GAS pharyngitis were tonsillopharyngeal erythema in (76-100%), tonsillopharyngeal exudate and petechial lesion in (51.75%)⁽¹⁹⁾.

Also Jamil M. F. in his study, found that tonsillopharyngeal erythema tonsillopharyngcal exudate with anterior cervical lymphadenopathy (tender and not tender) were the commonest signs in his patients which were present in (100%), (20%) and (23% and 14%), respectively⁽¹⁵⁾.

CONCLUSION

1. GAS is an identifiable microorganism in causing acute pharyngitis and forming about (34%) of all other possible causes of acute pharyngitis in children.
2. The commonest age incidence was between 6-8 years.
3. There was no sex difference with acute pharyngitis infection .
4. The commonest presenting symptoms were fever, dysphagia and sore throat and the commonest signs were tonsillopharyngeal erythema, tonsillopharyngeal exudate, and tender cervical lymphadenopathy.
5. Throat culture showed no growth or growth of normal flora in (56%) of the cases and other bacteria (Streptococcus pneumonia, streptococcus viridance... etc) in 10% of acute pharngitis.

RECOMMENDATIONS

1. Encourage parents to seek medical advice once their child suffer from fever and sore throat in order to have proper throat swab and to be given the proper antibiotic in order to prevent any complication.
2. Advice parents strongly to give the full ten days course of penicillin and not stop it when they see their child asymptomatic after few days.
3. Advice the general practionals and those physicians in the primary health care center not to prescribe penicillin haphazardly to any febrile child and to send any suspicious child of having sore throat and fever for culture and sensitivity in order not to lose the efficacy of penicillin by encouraging resistant microorganism.

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