

# Effect of Steroid Use on the Length of Staying in Hospital in Acute Follicular Tonsillitis Patients in Al Noor Specialties Hospital in Makkah Between the period of 2011-2016

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**Abstract:** The aim of this study was to know if there is any difference in length of stay in hospital if we use Steroid, and also to assess the most common organism that cause acute follicular tonsillitis in Al Noor hospital in patients with positive throat swab. A retrospective cohort study for total of 148 patients who had admitted in Al Noor Specialty Hospital in Makkah in period between 2011-2016 with Acute Follicular tonsillitis "AFT". A 38 patient with AFT received IV steroid either dexamethasone or Hydrocortisone while the rest did not receive any type of steroid. the data was collected by reviewing the file of those patients then filling a sheet that include personal data, diagnosis, length of stay, steroid use and its frequency, throat swab and their result, sensitivity of organism to Antibiotics, type of antibiotics that had been used. As for the result of throat swab most of the pateint had no growth (58,7%) and swab (33,3%). Checking the sensitivity of organism to ABx showed that most of the patient had no sensitivity to any organism. Only a few (1-1) had sensitive to ampicillin, cefuroxime, metronidazole, clindamycin, penicillin, gentamicin, levofloxacin, vancomycin, clindamycin. Most of the patients (73,4%) didn't use any steroid, 12% used dexamethasone. The association between steroid and decrease the length of stay in hospital for those patients with acute tonsillitis was significant in effect, as reflected by P values above the conventional (P>0.5) which is a significance level.

**Keywords:** follicular tonsillitis, personal data, diagnosis, length of stay, organism to Antibiotics, hospital.

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## 1. INTRODUCTION

Acute tonsillitis stands for a constant disease in the otorhinolaryngology <sup>(1)</sup>. Acute tonsillitis describes a viral or microbial tonsillitis with odynophagia, swelling as well as redness of the tonsils, perhaps with tonsillar exudate, cervical lymphadenopathy and also high temperature > 38.3 ° C <sup>(2)</sup>. An odynophagia for 24 to 48 hours, as part of prodromal symptoms of a common cold as a result of viral infection of the top respiratory system, is excluded from the definition of "acute tonsillitis" <sup>(3)</sup>. The incidence peak of acute tonsillitis is observed in children of school-age child, yet it might normally occur at any kind of age. Group A β-haemolytic streptococcus (GABHS) is in charge of regarding 10% of tonsillitis in grownups and 15-- 30% of those in children <sup>(4,5)</sup>. The disease transmission typically takes place through bead infection sent by other patients with acute GABHS tonsillitis, really seldom by asymptomatic carrier's tonsils <sup>(6,7)</sup>. The specific duty of these organism's doubts, and also some are believed to be part of the typical oropharyngeal vegetation <sup>(8)</sup>. These organisms consist of Haemophilus flus, as well as Staphylococcus aureus. A few of these microorganisms are recognized microorganisms that can create regional or system infections. These organisms were likewise revealed to be synergistic with GABHS as well as with various other germs in animal models <sup>(9)</sup>.

Acute tonsillitis additionally could be triggered by infections, such as double-stranded DNA infections (human adenoviruses, Epstein Barr Virus), flu as well as para-influenza infections; rhino-viruses; entero-viruses consisting of Cocksackie infections; corona infections; respiratory syncytial virus (RSV), as well as retroviruses <sup>(10)</sup>.

Acute tonsillitis is to be a clinical medical diagnosis better, criteria like the patient's history, clinical symptoms, and also laboratory values are called for to compare bacterial and viral origin of tonsillitis<sup>(11)</sup>. It ought to be highlighted, that also positive results in lab tests such as C-reactive healthy protein (CRP), serological criteria like positive anti-streptolysin-O titers (ASLO) or tonsil swabs (quick antigen detection or microbiological culturing) do not confirm a tonsillitis in asymptomatic patients<sup>(11)</sup>. An asymptomatic individual with microbiological proof of b-hemolytic streptococci in the pharyngeal swab is a supposed provider of b-hemolytic streptococci<sup>(11)</sup>.

The acute tonsillitis must be treated with steroids (e.g. dexamethasone). Relative to the signs and symptom reduction and primary healing the short-term late-generation antibiotic treatment (azithromycin, clarithromycin or cephalosporin for three to five days) is comparable to the long-lasting penicillin treatment. There is no difference during healing, reoccurrence or microbiological resistance in between the short-term penicillin therapy and the basic ten days' therapy. The perioperative and postoperative administration of high-dose steroids (dexamethasone or prednisolone) is plainly recommended in all standards. This decreases postoperative nausea or vomiting and also analgesic intake significantly and for that could decrease the hospital admission to these patients with acute tonsillitis<sup>(12,13)</sup>.

## 2. OBJECTIVES

The aim of this study was to know if there is any difference in length of stay in hospital if we use Steroid, and also to assess the most common organism that cause acute follicular tonsillitis in Al Noor hospital in patients with positive throat swab.

## 3. METHODOLOGY

A retrospective cohort study for total of 148 patients who had admitted in Al Noor Specialty Hospital in Makkah in period between 2011-2016 with Acute Follicular tonsillitis "AFT". A 38 patient with AFT received IV steroid either dexamethasone or Hydrocortisone while the rest did not receive any type of steroid. the data was collected by reviewing the file of those patients then filling a sheet that include personal data, diagnosis, length of stay, steroid use and its frequency, throat swab and their result , sensitivity of organism to Antibiotics ,type of antibiotics that had been used .

### Inclusion criteria:

All healthy patients with no specific age group who admitted in hospital and diagnosed as Acute follicular tonsillitis who complained of severe sore throat, fever and severe difficulty in swallowing.

### Exclusion Criteria:

All patients with any comorbidities such as; DM, HTN, BLOOD DISEASE, CARDIAC DISEASE.

## 4. RESULTS

148 patients were included in the final analysis of each treatment group in our study. The average age is 27 years. More than half (63,4%) of the patients were male, 35,3% were female. Most of the patients (80%) were Saudi. The patients staying length in the hospital between 1 to 19 days (**Figure 1**). Most of patient spent 2-3 days in the hospital. As for the duration of steroid we can see that mostly they used it for 2-3-4 days (6%-4%-1,3%) and most of them got 8mg.

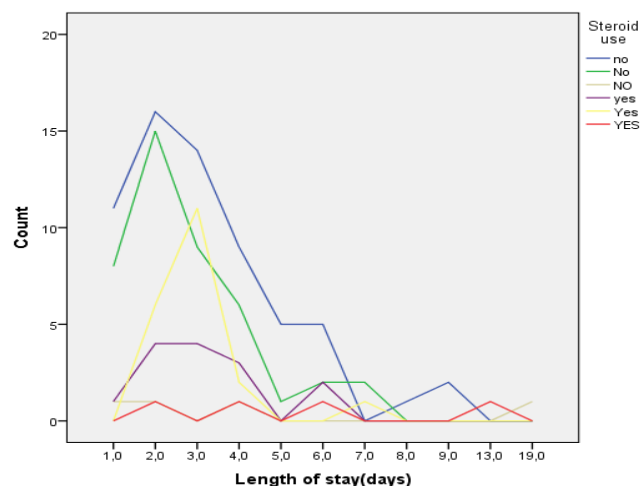


Figure 1: length of Patients staying in hospital in coloration to steroid use

As for the result of throat swab we can say that 1 patient had candida albicans, 1 patient had citrobacter koseri, 1 patient had enterococcus fecails, 1 patient had growth, 1 patient had MRSA, 73 patients had no growth, 34 patients had no swab, 4 patients had streptococcus pnemoniae (**Table 1**). As for the result of throat swab we can say that most of the patients had no growth and swab which means they are negative. 88 patients (58,66%) had no growth. In this group 73 patients didn't use steroid, 11 patients used dexamethasone, 2 hydrocortisone, and 2 SCA. 50 patients (33,33%) out of 150 had no swab in their throat swab. Out of it 34 patients didn't use steroid, 7 used dexamethasone, 1 had gastroenteritis, 1 had HTN, 1 used hydrocortisone, 1 SCA, 1 thalassaemia and 1 type 1 dm (**Table 1**). Also the Antibiotics sensitivity were shown to be more ineffective for the organism.

**Table 1: Results of throat Swab and the sensitivity to Antibiotics**

Sensitivity of organism to ABx:	Result of throat swab and organism type
Sens to cefuroxime, metronidazole: (0,7%)	Candida albicans: 1 (0,7%)
Sens to ampicillin, clindamycin: 3 (2%)	Citrobacter koseri: 1 (0,7%)
Sens to ampicillin, penicillin: 1 (0,7%)	Enterococcus fecails: 1(0,7%)
Sens to gentamicin, levofloxacin: 1 (0,7%)	Streptococcus pnemoniae: 4 (2,6%)
Sens to vancomycin: 2 (1,3%)	MRSA: 1 (0,7%)
none: 138 (92%)	Growth: 2 (1,3%)
	No growth: 88 (58,7%)
	No swab: 50 (33,3%)

Outcome measures of length of stay (in hospital) showed up to be 2,861 (95%CI) in relation to the use of steroid for both genders as 1.19 (95%), Therefore, since  $P > 0.05$  there is a significant effect of steroid on length of stays between patients (**Table 2**).

**Table 2: Study Characteristics with (95%CI):**

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
AGE (Years)	F	53	29,604	14,5197	1,9944	25,602	33,606
	M	95	25,947	15,4192	1,5820	22,806	29,088
	Total	148	27,257	15,1559	1,2458	24,795	29,719
SN	F	53	77,075	42,9650	5,9017	65,233	88,918
	M	95	73,063	42,9742	4,4091	64,309	81,817
	Total	148	74,500	42,8680	3,5237	67,536	81,464
DOSE/MG	F	4	17,500	21,7486	10,8743	-17,107	52,107
	M	17	16,206	28,0953	6,8141	1,761	30,651
	Total	21	16,452	26,5084	5,7846	4,386	28,519
Length of stay(days)	F	53	3,057	1,7477	,2401	2,575	3,538
	M	95	3,326	2,5157	,2581	2,814	3,839
	Total	148	3,230	2,2681	,1864	2,861	3,598
Steroid use	F	53	1,17	,379	,052	1,07	1,27
	M	95	1,31	,463	,047	1,21	1,40
	Total	148	1,26	,438	,036	1,19	1,33

Those patients who didn't use steroid were significantly more than those who did (**Table 3**). And our results showed that using steroid has an effect of the length of staying (in hospital). As 38 patients (25,67%) used steroid out of 148. They didn't stay in hospital as long as those who didn't use steroid which were (74,32%). They usually stayed for 4 days while those who didn't use steroid normally spent 6 days in hospital. In first group which used steroid no one stayed for 19 days while in the other group 1 patient did. Patients mostly stayed for 2-3 days. As a conclusion using steroid shorten the length of staying in hospital (**Table 3**)

**Table 3: difference in length of staying in hospital in case of Steroid use from non**

Length of stay (days)	Steroid use		Total
	YES	NO	
1	1	20	21
2	11	32	43
3	15	23	38
4	6	16	22
5	0	6	6
6	3	7	10
7	1	2	3
8	0	1	1
9	0	2	2
13	1	0	1
19	0	1	1
<b>Total</b>	38	110	148

## 5. DISCUSSION

In our study, steroids significantly increase the proportion of patients with sore throat who will experience complete resolution and then shortening of the stay in hospitals for those patients with acute tonsillitis. In this test showed that dexamethasone significantly and also dose-dependently decreased the size of stay in medical facility with variable difference.

Comparable trials revealed the results of steroids on resolution of pain as well as a result decreasing the remain in healthcare facility were most apparent in the preliminary 24 hours, which implies that a single dose of corticosteroids may be sufficient. This impact resembles that seen in croup where a single dose is normally appropriate<sup>(14)</sup>. Additionally, the one trial contrasting three day-to-day doses of dexamethasone with a single dose located no distinction in effect<sup>(14)</sup>.

Oral or intramuscular steroids in teens and children also show a considerable enhancement in signs with minimal negative effects and no unfavorable effects on disease development<sup>(15,16)</sup>. The best outcomes were seen in tried and tested streptococcal pharyngitis for dexamethasone (10 mg), along with betamethasone (8 mg) and also prednisolone (60 mg) with a clear decrease in the pain as well as feeling of illness, both in acute tonsillitis, as well as pharyngitis or sore throat<sup>(17)</sup>.

In systematic evaluation<sup>(16)</sup> integrated the results of 8 tests which considered this question, consisting of a total of 743 participants. Patients taking corticosteroids were three times most likely to experience total resolution of their sore throat symptoms by 24 hrs as compared to those taking placebo. Additionally, corticosteroids boosted the time to onset of signs and symptom alleviation and also the time to complete resolution of symptoms, although the tests were not constant for these outcomes. Adverse events, relapse rates and recurrence rates were not various for corticosteroid compared to placebo groups<sup>(16)</sup>.

Steroids gave substantial symptomatic benefit in people with aching throat they could possibly fill this therapeutic vacuum cleaner<sup>(18)</sup>. If corticosteroids minimize signs and symptoms, then it is possible that after testing in the lack of prescription antibiotics, and also if found to be efficient still without damaging impacts, after that they might be made use of to lower the demand for or use antibiotics for this problem. Although corticosteroids are commonly made use of in medical technique, they can cause side effects. It is consequently essential to establish exactly how often these occur in dealing with patients with sore throat and also whether they are exceeded by any kind of advantages<sup>(18)</sup>.

However, studies<sup>(19,20)</sup> in children and also grownups reveal that corticosteroids in mix with antibiotic treatment give symptomatic alleviation of tonsillitis signs and symptoms and faster recuperation, mostly in patients with severe or exudative aching throat brought on by GABHS. For children with serious signs and symptoms as well as bacterial virus validated by rapid streptococcal examinations, a single dosage of oral dexamethasone can be considered a safe adjunctive therapy with prescription antibiotics<sup>(19,20)</sup>.

Limitations of the here and now research study consist of the lack of comparable tests worldwide with details objectives as our study. Therefore, we suggest that future study should check out the benefit of steroids in patients that are not also taking antibiotics to reveal more trusted results about the effect of steroid on patient's length of remain.

## 6. CONCLUSION

The association between steroid and decrease the length of stay in hospital for those patients with acute tonsillitis was significant in effect, as reflected by *P* values above the conventional ( $P>0.5$ ) which is a significance level. Checking the sensitivity of organism to ABx showed that most of the patient had no sensitivity to any organism

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