



Received: 25-05-2023
Accepted: 05-07-2023

ISSN: 2583-049X

Antibiotic to Fasten Sore Throat Improvement in Upper Respiratory Infection

¹ Khaled M Mokbel Khalefa, ² Mohamed Khaled Mokbel Khalefa

¹ Professor, Faculty of Medicine, Mansoura University Consultant ENT, Al Lulu Medical Complex, Jubal, KSA, Saudi Arabia

² Medical Student Faculty of Medicine, Cairo University, University in Giza, Egypt

Corresponding Author: **Khaled M Mokbel Khalefa**

Abstract

Objective: The effectiveness of antibiotic use in sore throat in concomitant with rhinorrhea is still a controversy.

Method: 500 patients with the triad (sore throat, rhinitis, and cough) were divided into 2 groups; one group was

treated by antibiotic plus analgesics and another group received only analgesics.

Result and conclusion: Addition of antibiotics fastens the improvement of sore throat.

Keywords: Sore Throat, Rhinitis, Cough, Antibiotics, Upper Respiratory Infection

Introduction

Sore throat is a common reason for people to present for medical care and to be prescribed antibiotics. Overuse of antibiotics in primary medicine is a concern; hence it is important to establish their efficacy in treating sore throat and preventing secondary complications [1].

Rhinorrhea with or without cough is usually a common occurrence in common cold and upper respiratory infection, which mostly due to viruses [2]. The occurrence of sore throat is debatable about the etiology which may be viral in continuity with rhinitis or due to bacterial invasion [1]. Fever may start before or after the occurrence of sore throat and may be of any grade. Rhinitis alone or with cough is not an indication of antibiotics but when sore throat starts the concept may be changed. In our practice we noticed many patients with sore throat not fully improved by conservative medicines but still stay complaining and may persist for weeks. In many patients the fever may persist more than 3 days with little improvement on analgesics.

Material and Method

500 patients were included in the study in the period from august 2019 to august 2021. They were divided into 2 equal groups. Group 1 (120 males and 130 females), they received antibiotic azithromycin or amoxicillin, plus conservative medicines in the form of antihistamine, decongestant, analgesics. Group 2 (150 males and 100 females), they received only the conservative medicines. After 7 days, all patients were evaluated by telephone (200) or attending the clinic (300).

Result

Equal number of patients has been distributed into two groups (250 for each group). The most relevant result is that 80% of patients in group 1 showed significant improvement of sore throat. There were more or less equal number of patients in both groups with improved cough and rhinorrhea. Azithromycin in group 1 showed significant improvement rate of symptoms.

Table 1: Groups in the study

	Number	Male	Female	
G1	250	120	130	Antibiotic + antihistaminic+ steroid nasal spray+ cough suppressant
G2	250	150	100	Antihistaminic + steroid nasal spray + cough suppressant

Table 2: Symptomatic Improvement and non improvement

	Group 1		Group 2	
	Improved	Non improved	Improved	Non improved
Sore Throat	200	50	70	180
Cough	180	70	175	75
Rhinorrhea	220	30	230	20

Table 3: Symptom improvement in group 1 with different antibiotic

	Azithromycin	Amoxicillin
Sore throat	120	80
cough	100	80
rhinorrhea	140	80

Table 4: Number of Fever episodes in all patients during 4 days of treatment

	Group 1	Group 2
1 st day	660.50 ± 75.9	900.70±80.50
2 nd day	250.70±60	800.50±70.50
3 rd day	80.50±6.50	600.50±50.50
4 th day	30.50±5.50	300.50±60.50

Discussion

Sore throat with rhinorrhea, cough and fever are one of the most frequent reasons for missed school and work. Every year, children and adults have an average of 2 to 3 attacks of the triad of sore throat, rhinorrhea and cough [3]. The nasopharynx and oropharynx contain colonies of several bacteria which remain dormant unless there have been found any activating factor or factors. These Activating factors such as recent viral infection, mucosal changes due to allergy or exposure to colds and increase of bacterial load on each square mm of pharyngeal mucosa [4].

With no doubt the infection presented by fever, rhinorrhea with cough is due to viruses transmitted among people by close contact mostly through droplets [1]. These viruses are belonging to many different strains like rhinoviruses which are the most prevalent followed by corona viruses. Overall, the infecting organism cannot be exactly identified [5]. The traditional symptoms and signs that physicians use to distinguish viral from bacterial infection have not been determined helpful in making this distinction [6]. The occurrence of sore throat makes the condition different where it increases the suspicion about pharyngeal bacterial activation and invasion. The course of infection may start by viral and stay viral along its course or may be viral in the start then followed by bacterial activation and invasion [7]. So, virus may be the only cause or may be the initiator of the infection followed by bacterial invasion as a second phase. Virus itself usually responsible for mild morbidity but moderate to severe morbidity is the result of infection by bacteria. The initial viral infection activates the commensally lived bacteria in the nasopharynx and oropharynx to become pathogenic [8]. Although many published literatures recommend against use of antibiotics, standing on the concept of viral etiology along the course of the disease, in the practice many practitioners add antibiotics in their prescriptions, because many patients would not improve by conservative medicines. When patients who had, upper respiratory symptoms were randomized to receive immediate antibiotics, or to have antibiotic use delayed by 48 hours, clinical outcomes were not significantly different for most symptoms, although some symptom scores worsened in the delayed use groups who had sore throat and otitis media [9].

In clinical practice clinicians noticed that patients with sore throat treated by antibiotic were more satisfactory and the symptoms fade more rapidly. Antibiotics can decrease the pathogenicity of the pharyngeal commensals; also decrease of bacterial load on the pharyngeal mucosa. Viral infections without doubt cause decrease of local mucosal resistance

plus the systemic immunity making easy route for the bacteria to invade [10]. We noticed many patients with sore throat with rhinitis and high fever stayed a couple of days without improvement unless antibiotics were given. Azithromycin is better in improvement of sore throat especially when co morbid with cough and rhinorrhea.

Conclusion

There is no need to add antibiotics in the prescription for rhinorrhea and cough because the majority fades with conservative medicine. The condition is different if there is sore throat where antibiotics are better to be added in the medicine in order to provide fast and complete improvement and to avoid longstanding complaints. Azithromycin should be tried first because it has high improved rate on sore throat.

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