CLINICAL FEATURES AND TREATMENT RESULT OF PHARYNGITIS AT HUE UNIVERSITY HOSPITAL

Abstract

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Objective: To study on types, favorable factors, clinical characteristics and treatment result of pharyngitis to early diagnose, properly treat and prevent complications of pharyngitis. **Patients and method:** 171 patients with pharyngitis were studied by prospective and descriptive study with clinical interventions. **Results:** Age group from 16 - 30 occupied the highest rate 52.1%. Sex ratio male/female was 1/1.3. Acute pharyngitis 29.8%, chronic pharyngitis 68.5%. The most common favorable factor was sinusitis 37.4%. Common reason for visit was odynophagia 59.1%. Average disease duration of acute type was 6.9 ± 6.6 days, of chronic type was 4.1 ± 3.0 years. Fever showed rate 31.6%. Functional symptoms of pharyngitis including dysphagia 89.4%, odynophagia 73.1%, cough 40.9%, sputum 32.2%, itchy throat 28.7%. Common physical symptoms were red throat mucosa 71.3%, chronic lesions of throat mucosa 66.9%. Complication was otitis media 5.2%, broncho-tracheo-laryngitis 0.7%. Treatment results: recovery 46.2%, reduce disease 50.3%, no recovery 3.5%. Recovery showed the highest rate in acute pharyngitis (92.2%) and in chronic pharyngitis whose favorable factors were simultaneously treated (70.5%). **Conclusions:** Pharyngitis occurred the most frequently in young people, male and female sex. The most common type of pharyngitis was chronic. Recovery rate of acute pharyngitis was higher than chronic pharyngitis.

Key words: Pharyngitis.

1. BACKGROUND

Pharyngitis is usually inflammatory of oropharynx, this is a common disease that occurs all over the world. In Vietnam, acute pharyngitis tonsillitis showed 40 - 45% among patients at ENT clinics [3]. Most cases of pharyngitis are benign. If being monitored and treated properly, the disease will recovery and having no complication. However, some cases, if not treated properly, the disease can cause serious complications as nephritis, myocarditis, endocarditis...even septicemia cause death.

The diagnosis of pharyngitis is mainly based on clinic. For acute pharyngitis, treatment is usually pretty simple, except for a pharyngitis caused by diphtheria. For chronic pharyngitis, because of the difficulty of removing the favorable factors, treatment usually prolonged and the disease may recur. Therefore, understanding the clinical characteristics and treatment result of pharyngitis will help early diagnosis and treatment as well as correct method. Thereby, we can prevent complications, improve understanding of how to care and prevent pharyngitis.

Stemming from the above issues, we studied this subject for two objectives:

1. Research on category, favorable factors and the clinical characteristics of pharyngitis.

2. Evaluate treatment result of pharyngitis at Hue University Hospital of Medicine and Pharmacy.

2. PATIENTS AND METHODS

2.1. Patients

Including 171 patients with pharyngitis were examined and treated at Hue University Hospital from September 2013 to March 2014.

2.2. Methods

2.2.1. *Study design:* prospective and descriptive study with clinical interventions.

2.2.2. Study facilities: ENT endoscope, research paper.

2.2.3. Study targets and assessment

2.2.3.1. Types, favorable factors and clinical characteristics of pharyngitis

- Age, sex, profession, history of the ENT diseases.

- Types of pharyngitis.

- Favorable factors of chronic pharyngitis

- Reasons of visit and disease duration of pharyngitis

- Systemic, functional, physical symptoms.

- Complications of pharyngitis

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2.2.3.2. Treatment result of pharyngitis

- Time of evaluation: After 10-day course of therapy for acute pharyngitis and after 3 months for chronic pharyngitis.

- The evaluation criteria: Comprising of systemic, functional, physical symptoms.

- Classification of treatment results: recovery, reduce and no recovery

3. RESULTS

3.1. Types, favorable factors and clinical characteristics of pharyngitis

- The relation between clinical types and treatment result of pharyngitis.

- The relation between treatment of favorable factors of chronic pharyngitis and treatment result.

2.2.4. Data processing

The data is entered, stored and processed by statistical software SPSS 22.0.

3.1.1. General characteristics 3.1.1.1. Characteristics of age

Age	Number	Percentage %	р
≤ 15	17	9.9	
16 - 30	89	52.1	
31 - 45	31	18.1	.0.01
46 - 60	25	14.6	< 0.01
> 60	9	5.5	
Total	171	100.0	

Table 3.1. Age of patients with pharyngitis (n=171)

Ages from 16-30 was the highest rate group 52.1%. *3.1.1.2. Characteristics of sex*

Table 3.2. Sex of patients with pharyngitis (n=171)

Sex	Number Percentage %		р
Male	74	43.3	
Female	97	56.7	> 0.05
Total	171	100.0	

Male patient showed 43.3%, female patient showed 56.7% (p > 0.05). Sex ratio male/female was 1/1.3. 3.1.1.3. Profession and history of ENT diseases chronic pharyngitis occupied 68.5% (117/171)

- Profession of patients in our research was follows: students 50.3%, civil servants 13.4%, workers 11.1%, farmers 5.7%, businessmen 7.6%, homemakers 4.7%, others 8.2%.

- Patients with a history of pharyngitis-related diseases showed 42.1% (72/171), distributed as follows: chronic rhinosinusitis was the highest 32.2% (55/171), then chronic tonsillitis 7.6% (13/171), the lowest was general chronic diseases 2.3% (4/171). *3.1.2. Types of pharyngitis*





subacute pharyngitis occupied 1.8% (3/171),

chronic pharyngitis occupied 68.5% (117/171). *3.1.3. Favorable factors of chronic pharyngitis* **Table 3.3.** Favorable factors of chronic pharyngitis

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Favorable factors	Number	Percentage %	р
Chronic rhinosinusitis	64	37.4	
Deviated nasal septum	41	24.0	
Hypertrophy of inferior turbinate	21	12.3	
Tonsillitis	16	9.4	< 0.01
Chronic stimulation	6	3.5	
Environmental pollution	4	2.3	
Chronic general diseases	4	2.3	

The most common favorable factors were chronic rhinosinusitis 37.4%, deviated nasal septum 24%.

3.1.4. Clinical characteristics of pharyngitis

3.1.4.1. Reasons for visit



The most common reason for visit was odynophagia 59.1%.

3.1.4.2. Disease duration of pharyngitis

 Table 3.4. Disease duration of acute pharyngitis (n=51)

Disease duration	Number	Percentage %	р
1-7 days	35	68.6	
8-14 days	7	13.7	
15-21 days	6	11.8	< 0.01
> 21 days	3	5.9	
Total	51	100.0	

Most patients with acute pharyngitis had disease duration from 1-7 days (68.6%). *3.1.4.3. Systemic symptoms*

 Table 3.5. Systemic symptoms (n=171)

Systemic symptoms	Number	Percentage %
Fever	54	31.6
Normal	117	68.4
Total	171	100.0

Fever in pharyngitis occupied 31.6%.

3.1.4.4. Functional symptoms



Chart 3.3. Functional symptoms (n=171)

Two common functional symptoms were dysphagia 89.4% and odynophagia 73.1%.

3.1.4.5. Physical symptoms

Types Physical symptoms	Acute type (n=51)	Subacute type (n=3)	Simple chronic type (n=49)	Acute exacerbations of chronic type (n=68)	Total (n=171)
Red throat mucosa	51 (100.0%)	3 (100.0%)	0 (0.0%)	(100.0%)	122 (71.3%)
Tonsillar swelling	26 (50.9%)	2 (66.6%)	4 (8.2%)	27 (39.7%)	59 (34.5%)
Tonsillar exudates	3 (5.9%)	1 (33.3%)	0 (0.0%)	12 (17.6%)	16 (9.4%)
White plaques on tonsils	4 (7.8%)	0 (0.0%)	0 (0.0%)	1 (1.5%)	5 (2.9%)
Pseudomembrane	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Chronic lesions of throat mucosa	0 (0.0%)	0 (0.0%)	34 (69.4%)	47 (69.1%)	81 (66.9%)
Pseudocolumns	0 (0.0%)	0 (0.0%)	2 (4.0%)	2 (2.9%)	4 (2.3%)
Hypertrophic lymphatic tissues	0 (0.0%)	0 (0.0%)	24 (49.0%)	29 (42.6%)	53 (31.0%)
Tender anterior cervical lymphadenopathy	4 (7.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (2.3%)
		p < 0.01			

Table 3.6. Physical symptoms according to types (n=171)

2/3); for simple chronic pharyngitis were chronic lesions of throat mucosa (69.4%) and hypertrophic lymphatic tissues (49%); for chronic pharyngitis

The most common physical symptoms for acute and subacute pharyngitis were red throat mucosa (100% and 3/3) and tonsillar swelling (50.9% and in acute exacerbations were red throat mucosa 100%, chronic lesions of throat mucosa 69.1%, hypertrophic lymphatic tissues 42.6%, tonsillar swelling 39.7%.

3.1.4.6. Complications of acute pharyngitis and chronic pharyngitis in acute exacerbations **Table 3.7.** Complications of acute pharyngitis and chronic pharyngitis in acute exacerbations (n=171)

Complications	Number	Percentage %
Otitis media	9	5.2
Broncho-tracheo-laryngitis	1	0.7
No complications	161	94.1
Total	171	100.0

Among 171 patients with pharyngitis were treated, 10 cases had complications, accounted for 5.9%; including 9 cases of otitis media (5.2%) and 1 case of broncho-tracheo-laryngitis (0.7%).

3.2. Treatment result of pharyngitis

3.2.1. General treatment result

Table 3.8. General treatment result (n=171)

Treatment result	Number	Percentage %	р
Recovery	79	46.2	
Reduce	86	50.3	< 0.01
No recovery	6	3.5	< 0.01
Total	171	100.0	

Recovery 46.2%, reduce disease 50.3% and no recovery 3.5%.

6 50



3.2.2. The relations between types and treatment result of pharyngitis

In acute and subacute types, recovery rate was highest (92.2% and 66.7%); whereas in chronic pharyngitis (simple chronic and chronic types in acute exacerbations), recovery rate was low (22.5% and 27.9%); (p < 0.01).

3.2.3. The relations between treatment of favorable factors of chronic pharyngitis and treatment result Table 3.9. The relations between treatment of favorable factors of chronic pharyngitis

	and	treatment result ((n=117)).
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Treatment result	Rec	overy	Re	duce	reco	No overy	Т	otal	р
favorable factors	n	%	n	%	n	%	n	%	
Yes	24	70.5	10	29.5	0	0	34	100.0	< 0.01
No	4	4.8	74	89.2	5	6.0	83	100.0	< 0.01
Total	28		84		5		117		

Patients who were treated favorable factors had the recovery rate the highest 70.5%; whereas patients who were not treated favorable factors, the recovery rate was the lowest 4.8%; (p < 0.01).

4. DISCUSSIONS

4.1. Types, favorable factors and clinical characteristics of pharyngitis

4.1.1. General characteristics

4.1.1.1. Characteristics of age

Ages from 16-30 was the highest rate group 52.1% (table 3.2). According to the research of Emily Aaronson et al (2011), ages from 16-45 was the highest rate group 65.7% [6]; results of our study were consistent with this author, ages from 16-45 showed 70.2%. Vo Tan also said that pharyngitis occurred the most frequently in young people [4]. This was a dynamic age, the labor force, they had many activities, exposured to many favorable factors, so the pharyngitis rate of this age group was high.

4.1.1.2. Characteristics of sex

According to our result through the table 3.2, the rate of female patient (56.7%) was higher than male patient (43.3%), but this difference was not statistically significant (p > 0.05). Sex ratio male/ female was 1/1.3. Our result was consistent with study of Dinh Van Bum, Zo Ram Hanh (2005) about pharyngitis of people at Phu Hoi ward - Hue, where pharyngitis showed 60.4% (151/250) among cases having ENT diseases, female (53.64%) was higher than male (46.36%) [1].

4.1.1.3. Profession and history of ENT diseases

According to section 3.1.1.3:

- The majority of patients with pharyngitis were students (50.3%), this was the large force in Hue, they had more advantage conditions to visite at the Hue University Hopital. To our opinion, may be group of students often paid attention to their health,

Chart 3.4. The relations between types and treatment result of pharyngitis (n=171).

had general knowledge about the disease, so they went to the hospital as soon as the disease appeared.

- Patients with a history of pharyngitis-related diseases showed 42.1%, distributed with the highest rate on chronic rhinosinusitis 32.2%.

4.1.2. Types of pharyngitis

According to the authors, pharyngitis can be classified into 3 clinical types: acute pharyngitis (disease duration ≤ 4 weeks), subacute pharyngitis (disease duration ≥ 4 weeks and ≤ 12 weeks), chronic pharyngitis (disease duration \geq 12 weeks). Chronic pharyngitis includes simple chronic pharyngitis and chronic pharyngitis in acute exacerbations [2], [3], [4], [7].

Chart 3.1 showed chronic pharyngitis occupying the highest percentage of 68.5% (117/171), including simple chronic pharyngitis 28.7% (49/171) and chronic pharyngitis in acute exacerbations 39.8% (68/171); then acute pharyngitis 29.8% (51/171); subacute pharyngitis occupied the lowest percentage of 1.8% (3/171). Acute pharyngitis if not treated properly will progress and become prolonged chronic pharyngitis; furthermore in pathology of pharyngitis, due to having many causes and favorable factors, so pharyngitis tends to evolve into chronic and relapsing [2], [7], [9]. In addition to the related diseases of the ear, nose and throat which facilitate recurrent pharyngitis, Hue weather conditions also contribute to increase the rate of chronic pharyngitis. Moreover, self-medication of patient is not properly, as overuse of antibiotics makes prolong acute pharyngitis and becomes chronic pharyngitis.

4.1.3. Favorable factors of chronic pharyngitis

In our study, according to table 3.3, the most common favorable factors were sinusitis 37.4%, deviated nasal septum 24%.

The favorable factors of pharyngitis are often classified into 4 groups [8]: The first group is *pathology of neighbouring organs* including chronic rhinosinusitis 37.4%, deviated nasal septum 24%, hypertrophy of inferior turbinate 12.3%, chronic tonsillitis 9.4%; the second groups is *chronic stimulation* such as dust, smoke, chemicals or alcohol and smoking abuse... occupied 3.5%; the third group is *environmental pollution* 2.3% and the fourth group is *chronic general diseases* 2.3%. In addition, severe weather conditions of Hue impact throat area considered as the gateway of upper digestive and respiratory tract.

Rhinitis, sinusitis caused nasal congestion, prolonged mouth breathing, and nasal mucus, pus dropped down the back wall of throat; these facilitated the process of pharyngitis [5]. Nguyen Huu Khoi, Vo Tan and many other authors also showed that chronic nasal congestion as deviated nasal septum, hypertrophy of inferior turbinate as well as stimulators from the environment such as dust, smoke, chemicals or alcohol abuse and smoking... were agents causing chronic pharyngitis [2], [4], [5], [8]. Chronic inflammatory process of throat mucosa is usually the combination between two factors: throat mucosa itself and favorable factors, stimulatings affect throat mucosa. First, throat mucosa is weak at function and adaptation. At the same time, these favorable factors are conditions for recurrence of chronic pharyngitis [2]. 4.1.4. Clinical characteristics of pharyngitis

4.1.4.1. Reasons for visit

Chart 3.2 showed for each patient, we recorded the most prominent symptom which was reason for visit. The most common reason for visit was odynophagia 59.1%. This result was consistent with research of Jeffrey A. Linder (2005), the most common reason for visit was odynophagia 55% [7]. According to Vo Tan, Pham Khanh Hoa and some other authors: Odynophagia is subjective symptom, usually occurs first in patients with pharyngitis [4]. With anatomical features, the throat has a dense nervous system that creates tangles of throat, so when the throat is infected, patients often feel odynophagia because sensory fibers of the nerves V, IX, X are stimulated [2]. Odynophagia affects daily life of patients, so it is the most common reason that patients with pharyngitis visit.

4.1.4.2. Disease duration of pharyngitis

Table 3.4 showed most patients with acute pharyngitis had disease duration from 1-7 days (68.6%). Thus, the majority of patients with acute type visited early, within the first week. Average disease duration of acute type was 6.9 ± 6.6 days, of subacute type was 7.3 ± 2.5 weeks, of chronic type was 4.1 ± 3.0 years. For acute pharyngitis, early examination is very essential in the diagnosis and treatment, so we studied disease duration of acute pharyngitis.

4.1.4.3. Systemic symptoms

Table 3.5 showed fever occupied 31.6%, approximate to that of Jeffrey A. Linder's research (2006) on the examination and treatment of pharyngitis in a private clinic, fever accounted for 36.2% [8].

4.1.4.4. Functional symptoms

Chart 3.3. showed two common functional were dysphagia 89.4% symptoms and odynophagia 73.1%. According to Le Van Loi, in acute pharyngitis, prominent symptom is odynophagia [3]. Odynophagia having many levels, from dull ache to severe pain, may be continuous or only occurs or increases when eating or chewing, swallowing [2]. Besides, the result of our study showed also the level of odynophagia: mild occupied the highest rate 66.4%, then medium 28.8%, finally serious 4.8%. Our result was consistent with Nguyen Huu Khoi that in pharyngitis, odynophagia is the main symptom but mostly are in mild level [2].

4.1.4.5. Physical symptoms

Table 3.6 showed with each different type of pharyngitis, the physical symptoms are also different in patients. In our study, the most common physical symptoms for acute and subacute pharyngitis were red throat mucosa (100% and 3/3) and tonsillar swelling $(50.9\% \text{ and } 100\% \text{ a$ 2/3); for simple chronic pharyngitis were chronic lesions of throat mucosa (69.4%) and hypertrophic lymphatic tissues (49%); for chronic pharyngitis in acute exacerbations were red throat mucosa 100%, chronic lesions of throat mucosa 69.1%, hypertrophic lymphatic tissues 42.6%, tonsillar swelling 39.7%. Generally, the most common physical symptoms in all types of pharyngitis was red throat mucosa 71.3% and chronic lesions of throat mucosa 66.9%. Because acute type and acute exacerbations of chronic type were majority in this study, while, pathogenic mechanism of these two types begins with viral infection, then, viral toxins, anatomy of tonsils and resistance of the body cause other bacterial surinfections, usually bacteria from the throat; the bacteria release toxins or antigens which stimulate, activate inflammatory response of the body, cause red throat mucosa [5].

Recurrent chronic pharyngitis causes diffuse lesions of throat mucosa, thick red throat, scatter lymphocyte particles in throat mucosa, or mucosal atrophy often associate with mouth breathing which caused by nasal congestion or the spread of atrophic rhinitis process [4].

4.1.4.6. Complications of acute pharyngitis and chronic pharyngitis in acute exacerbations

Table 3.7 showed pharyngitis caused complications with the rate of 5.9%, including otitis media (5.2%) and broncho-tracheolaryngitis (0.7%). Le Van Loi also said that the nose, sinuses, middle ear, throat, larynx were lined with the same mucous membrane, so throat mucosal inflammation caused complications such as otitis media, broncho-tracheo-laryngitis which usually occur in infants [3]. According to the United States statistics, glomerulonephritis accountes for 1% in all cases of pharyngitis - tonsillitis and pyoderma caused by group A β -hemolytic streptococcus [2]; however, our research had not found any cases of complications such as glomerulonephritis, rheumatic fever, endocarditis, rheumatic heart... Nguyen Huu Khoi said that complications after streptococcal pharyngitis as rheumatic fever may be caused sequelae to heart valves, usually occured 18 days after a streptococcal pharyngitis [2]. Marta Regoli et al (2011) suggested that treatment with penicillin for the cases of streptococcal pharyngitis within 9 days after the onset of symptoms reduced 75% rheumatic heart [9].

4.2. Treatment result of pharyngitis *4.2.1. General treatment result*

Table 3.8 showed recovery 46.2%, reduce disease 50.3% and no recovery 3.5%. In our study, recovery rate was not high because the majority of patients were chronic pharyngitis, we had difficulties to remove favorable factors, so the treatment was usually prolonged and the disease was often recurrent.

4.2.2. The relations between types and treatment result of pharyngitis

Chart 3.4 showed in acute and subacute types, recovery rate was highest (92.2% and 66.7%); whereas in chronic pharyngitis (simple chronic and acute exacerbations of chronic types), recovery rate was low (22.5% and 27.9%); with statistically high significant difference (p < 0.01). This result suggested that the treatment of acute and subacute pharyngitis were not too difficult, just treat early, correctly, sufficiently and the disease recovered.

Because group A β -hemolytic streptococcal acute pharyngitis caused serious complications for patient, many authors agreed that all cases of acute pharyngitis in patients older than 3 years were treated as a streptococcal pharyngitis when we did not have tests to identify the virus or bacteria [5]. Symptoms will disappear before the completion of treatment, but the full 10-day course of therapy is necessary to completely eradicate the infection and to prevent complications.

In chronic pharyngitis, recovery rate was low because the patients had not been removed the favorable factors; these favorable factors were conditions for development of the virus, bacteria. Moreover, Hue's changeable weather also contribute to increase the rate of chronic pharyngitis. According to Nguyen Huu Khoi, treatment of chronic pharyngitis mainly removed favorable factors, the extended use of systemic antibiotics can not only bring results, but can even lead to disorder populations of symbionts in the throat, enabling the available bacteria in the throat (but not cause disease) develope and cause disease [2].

4.2.3. The relations between treatment of favorable factors of chronic pharyngitis and treatment result

Table 3.9 showed patients who were treated favorable factors had the recovery rate the highest 70.5%; whereas patients who were not treated favorable factors, the recovery rate was the lowest 4.8%; with statistically high significant difference (p < 0.01). This result was consistent with Dang Thanh, Nguyen Huu Khoi: treatment of chronic pharyngitis don't have specific therapy, but mainly to remove the causes, the favorable factors causing chronic pharyngitis, combine with local therapy which helps patients comfort and promote recovery of throat mucosa. It is necessary to treat radically ENT diseases, systemic diseases which are actually favorable factors of recurrent chronic pharyngitis. Furthermore, it is also necessary to overcome the harmful effects of the environment, of profession, of lifestyle, to limit alcohol, tobacco, to control climate, to improve environment (smoke, dust, chemicals) [2], [5].

5. CONCLUSION

5.1. Types, favorable factors and clinical characteristics of pharyngitis

- Age group 16-30 accounted for the highest 52.1%. Ratio male / female = 1/1.3

- Acute pharyngitis 29.8%, subacute type 1.8%, simple chronic type 28.7% and chronic type

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in acute exacerbations 39.8%

- The most common favorable factors of chronic pharyngitis were chronic rhinosinusitis 37.4%, deviated nasal septum 24%.

- The most frequent reason for visit was odynophagia 59.1%.

- Average disease duration of acute pharyngitis was 6.9 ± 6.6 days, of subacute type was 7.3 ± 2.5 weeks and the chronic type was 4.1 ± 3.0 years.

- Disease duration of acute pharyngitis from 1-7 days accounted for 68.6%.

- Fever showed 31.6%.

- Common functional symptoms of pharyngitis were dysphagia 89.4% and odynophagia 73.1%.

- Common physical symptoms of pharyngitis were red throat mucosa 71.3% and chronic lesions of throat mucosa 66.9%.

- The most common complication of acute pharyngitis and of chronic pharyngitis in acute exacerbations was otitis media accounted for 5.2%.

5.2. Treatment result of pharyngitis

- General treatment results: recovery 46.2%, reduce disease 50.3%, no recovery 3.5%.

- There was a statistically significant relation between types and treatment outcomes: In acute pharyngitis, recovery rate was the highest 92.2%; in chronic pharyngitis, recovery rate was low 25.6%.

- There was a statistically significant relation between treatment of favorable factors of chronic pharyngitis and treatment outcomes: Patients who were treated favorable factors, recovery rate was high 70.5%; patients who were not treated favorable factors, recovery rate was low 4.8%.

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