

newborn period will reduce the number of chronic forms and disability in older children.

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GASTROESOPHAGEAL REFLUX DISEASE COMPLICATED BY BARRETT'S ESOPHAGUS (AT THE EXAMPLE OF THE MEDICAL UNIT HEALTH OF THE MINISTRY OF INTERNAL AFFAIRS OF THE RF ON RS (Y))

ABSTRACT

The article presents the data of endoscopic examination of patients of the Medical unit the Health Ministry of Internal Affairs of the RF in the RS (Y) with a diagnosis gastroesophageal reflux disease and its complicated forms. We compared the chromoezophagoscopy data with the results of histological examination of biopsy samples. We analyzed risk factors frequency of patients with a verified diagnosis Barrett's esophagus.

Keywords: gastroesophageal reflux disease, Barrett's esophagus, chromoezophagoscopy.

INTRODUCTION

The gastroesophageal reflux disease (GERD) is the topical issue of the gastroenterology as well as the internal medicine. This disease is characterized by inflammatory processes in the mucosa of the distal part of the esophagus and/or specific clinical symptoms caused by frequent passage of gastric and/or duodenal contents into the esophagus.

The actual prevalence of GERD remains unestablished, that caused by big variety of clinical symptoms. According to the researches in Europe

and the USA, 20-25% of the population has the clinical symptoms of GERD and 7% have these ones every day. In the presence of the general medical practice, 25-40% of the patients diagnosed with GERD have the esophagitis that based on endoscopic data, but most people with GERD don't have endoscopic symptoms.

The actual prevalence of GERD is notably higher than its statistics data, considering that among other things as few as 1/3 people with GERD seek medical advice. According to the data of

the FGHI «Medical room of the Interior Ministry of the Russian Federation for the Novosibirsk region» among 630 officers, having visited the military-medical commission in 2002-2009, GERD was diagnosed among 256 officers (40,6%).

Some separate researches on clinical-morphofunctional characteristics of GERD in various age and ethnic groups of the population were done in Yakutia [1, 3, 9]. Meanwhile, the symptoms of the complicated forms of the GERD were under-investigated among our population.

Barrett esophagus is well recognized as a non-heritable condition and a complication of GERD. In Barrett esophagus, planocellular epithelium within esophageal mucosa is replaced with columnar one formed as a specialized intestinal metaplasia [6, 10].

The clinical importance of Barrett esophagus lies in the fact that it is a contributory cause to a progression of ulcers and peptic esophageal stricture and, consequently, is a transition from premalignancy to malignancy [2, 11]. It should be noted that intestinal columnar epithelium resulted from a metaplasia increases risk of esophageal cancer in 30-125 times. Averagely, Barrett esophagus is formed in 40 years old, but is detected in 60. Its approximate prevalence in Western countries is one person per 100 people aged 60 and older and one person per 20 people diagnosed with GERD [12].

According to the data of the world literature, risk of malignant progression/transformation in patients with Barrett esophagus varies from 5% to 50% and directly depends on a dysplasia rate, revealed during the morphological examination. Yakutia remains an endemic region because of a high prevalence of esophageal cancer – more than 150 people per 100 thousand inhabitants [5, 4].

So, the importance of the research topic is caused by the high prevalence of GERD, typical and atypical clinical symptoms, having the negative influence on the quality of life of the patients, and insufficient information on the clinical-morphofunctional characteristics of the complicated forms among the population of Yakutia. In particular, Barrett esophagus, a serious complication of GERD, comes into importance because it increases risks of the progression of the esophageal adenocarcinoma. The incidence rate of GERD and its complications warrant more research and the implementation of the contemporary mechanisms of the systemic diagnosis of this disease.

The objective of the research is to compare the results of the chromoesophagoscopy with the results of the morphological examination and to give the incidence rate, age and ethnic characteristics of GERD, complicated by Barrett esophagus.

DATA AND METHODS OF THE RESEARCH

996 patients were observed by use of the method of fiberoptic esophagogastroduodenoscopy (fiberoptic EGD) on the basis of the Federal

Table №1.
The results of the chromoesophagoscopy and the histological examination for patients with the erosive form of GERD (n=50)

The conclusion of the histological examination	The results of chromoesophagoscopy	
	Absolute numbers	%
Layers of squamous epithelium with the lymphocytic infiltration	7	14
Thickened layers of the squamous epithelium with/without anabrosis	10	20
Layers of squamous epithelium with parakeratosis and leukoplakia	5	10
Focal dysplasia (I grade)	6	12
Focal dysplasia (II grade)	3	6
Focal dysplasia (III grade)	1	2
Barrett esophagus	18	36

Government Health Institution (FGHI) «Medical room of the Interior Ministry of the Russian Federation for the Republic of Sakha» during 2014. 344 patients (34.5%) from 20 to 75 years old were diagnosed with GERD, including its erosive and non-erosive symptoms. The endoscopy was held by use of the fiberoptic esophagogastroduodenoscope «Pentax» (Japan).

The pathomorphological researches were done on the basis of the anatomic pathology department of the Republic hospital №1 (National Center for Medicine) in Yakutsk. Biopsy material was taken from the mucosa of the distal part of the esophagus and all the suspicious areas by the use of 4-quadrant method at 2 cm intervals. The chromoesophagoscopy with the further multiply target biopsy was done

for 50 patients to detect morphological transformations of the erosive reflux esophagitis revealed by the use of the endoscopic method. Researches were done with the use of methylene blue (0.25%), which is capable to enter cytoplasm of the transformed cells. The dye-wares colors (vital dyes) were needed to get extra information about the previous functional and morphological transformations. The results of chromoesophagoscopy were treated in the following way: untransformed mucosa doesn't take a dye; the areas of dysplasia, leukoplakia, anabrosis and ulcercovered with fibrin take a blue dye; the areas of mucosa diseased by cancer take an intense blue dye.

RESULTS AND DISCUSSION

There were 290 men (84,3%) and 54 women (15,7%) among 344 patients diagnosed with GERD. 46,7% of the

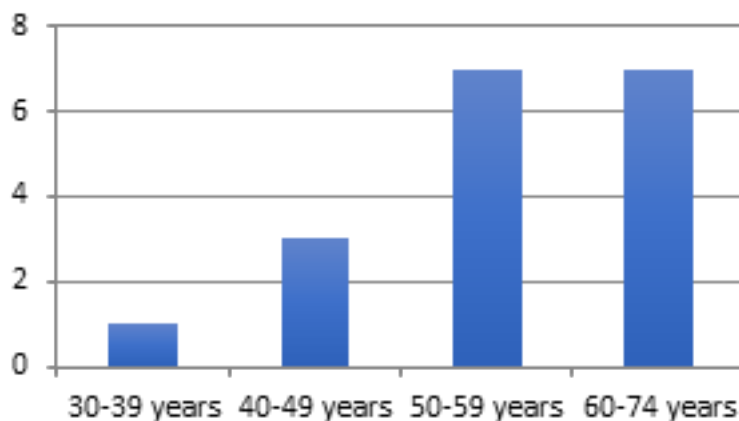


Fig. №1. Disposition of patients with Barrett esophagus, according to their age

patients (161 patients) were officers with a special rank, 16,7% - officers and workers of another law enforcement authorities (The Administration of the Federal Service for Corrections, Ministry of Civil Defense and Emergency Response) and 36,6% - the civilian employees, the elderly and the members of the officers' families.

The chromoesophagoscopy with the further target biopsy was done for 50 patients with the erosive form of GERD (table №1). The analysis of the data comparison of the chromoesophagoscopy with the results of the histological examination revealed that the mucosa of the esophagus of 22 patients (44%) was characterized by lympholeucocytic infiltration, thickened layers of the squamous epithelium and the areas of the parakeratosis with the leukoplakia. 10 patients (20%) had more apparent findings as focal dysplasia (low-grade, medium-grade and high-grade).

However, according to the morphological examination 18 patients (36%) had the changes that typical for Barrett esophagus, such as columnar metaplasia with the detection of columnar epithelium of three types – fundic, cardiac and specialized intestinal. The obtained data is consistent with the results of the research of Cuban State Medical University [7] and other researches [8].

Among the patients with Barrett esophagus were 16 men (88,9%) and 2 women (11,1%) aged 30 to 75 years. This pathology was typical for the middle-aged and the elderly-aged people: 50-59 years (38,9%) and 60-74 (38,9%). This age category includes retired employees of the Interior Ministry. The group aged 30 to 40 years include only 1 patient (5,5%), 40 to 50 years – 3 patients (16,7%), which is typical for officers with a special rank (illustration №1).

The ethnic composition of the patients with Barrett esophagus has a significant difference (illustration №2). The group of the native population included 10 Yakuts and 2 evens. Non-native population was divided into 2 subgroups: 1 – people of the first generation, having come to Yakutia from various regions of the Russian Federation and Commonwealth of Independent States (CIS), 2 – people of the second population, having born in Yakutia. Among the patients with Barrett esophagus 12 persons (66%) turned out to be native, 2 persons (11%) – non-native (first generation) and 4 persons (22%) – non-native (second generation) (illustration №2).

Table 2

Hereditary burden of the patients with Barrett esophagus of the different ethnic identity

Ethnic identity of patients	Total number of patients	Hereditary burden for cancer		
		From a mother	From a father	From relatives
The native	12	-	3	1
The non-native (1 st generation)	2	1	-	-
The non-native (2 nd generation)	4	1	2	1

It should be noted that 50% of the patients with Barrett esophagus (9 of 18 patients) reported that they had a hereditary burden for cancer. Among them 44% were the native (4 persons), 55,6% - the non-native (table №2), i.e. this important risk factor is more apparent among the non-native population.

Hereditary burden of the patients with Barrett esophagus of the different ethnic identity

The analysis of the main risk factors for digestive diseases as a nutritional disorder, smoking and excessive drinking (illustration №3) revealed that 77,8% of the patients often ignored the nutrition prescription, and also preferred hot and spicy food, 66,7% were smokers, and 16,7% drink to excess.

The analysis of the clinical presentations of the reflux disease and the causes of Barrett esophagus

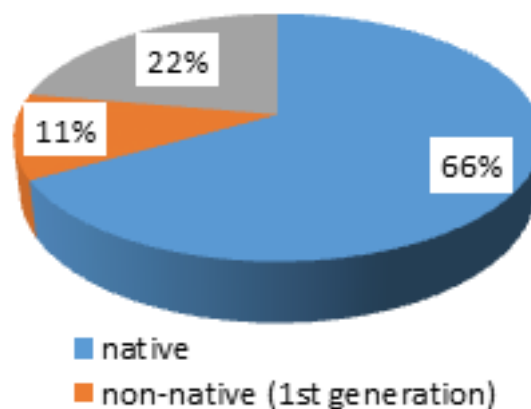


Fig. №2. Disposition of patients with Barrett esophagus, according to their ethnic identity

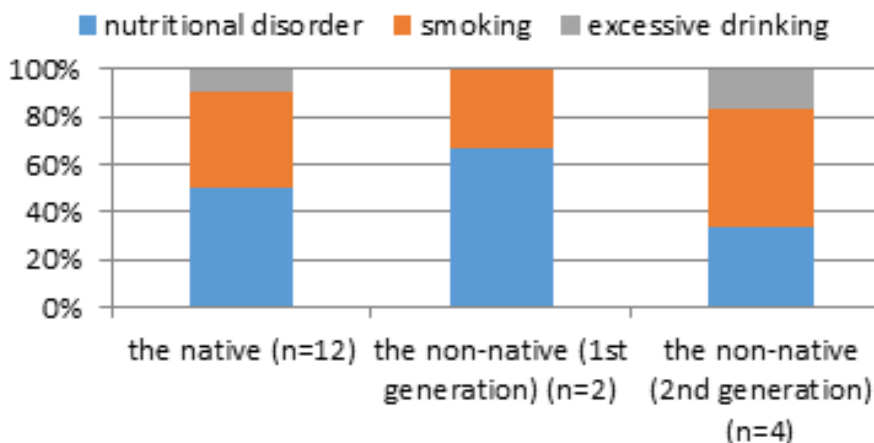


Fig. №3. Risk factors for the patients with Barrett esophagus

revealed the following main symptoms: heartburn (94,4%), regurgitation (55,6%), dysphagia and odynophagia (33,3%), pain under the sternum (27,8%), extra-esophageal symptoms as chronic cough, pharyngitis, dysphonia, sleep apnea, halitosis (27,8%).

CONCLUSION

So, among the patients diagnosed with GERD Barrett esophagus as its serious complication was detected in 18 from 344 people (5.23%). This pathology is more typical for men than women; for the middle-aged and the elderly-aged people; for native population (66%), than non-native; 50% of the patients had a hereditary burden for cancer. 77,8% of the patients eat food, that thermally and mechanically irritate esophagus, 66.7% are smokers. The key symptom of this pathology – the heartburn – was detected among 94.4%.

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