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PECULIARITIES OF CLINICAL CONDITION OF PATIENTS WITH ISCHEMIC HEART DISEASE WITH CONCOMITANT CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Mirzayev Rizamat Ziyadullaevich
Assistant of the Department of Internal Medicine and Cardiology No. 2
Samarkand State Medical University
Samarkand, Uzbekistan
Nasyrova Zarina Akbarovna
DSc, Associate Professor of Internal Medicine and Cardiology Department №2 of Samarkand State Medical University
Samarkand, Uzbekistan
Ergashev Sunnatillo Dosiyor Ugli
Student of medical faculty
Samarkand State Medical University
Samarkand, Uzbekistan

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Abstract:
The problem of COPD and IBS to date remains one of the most urgent for both medicine and society as a whole. Widespread prevalence of these diseases determines high probability of their combination in the same patients. The clinical picture of such a combination is characterized by the development of the "syndrome of mutual aggravation" in patients, manifested by marked disorders of external respiratory function, central and peripheral hemodynamics, microcirculation, decreased tolerance to physical activity (TPA). Thus, the problem of clinical picture of CHD with concomitant COPD is complicated, contradictory, in many respects insufficiently studied.

Keywords:. coronary heart disease, chronic obstructive pulmonary disease, myocardial infarction

Endothelial dysfunction contributes fundamentally to the development of atherosclerosis, which ultimately leads to coronary heart disease (CHD). The process is further accelerated by systemic inflammation and oxidative stress. As a result, approximately one in six patients with COPD suffers from concomitant CHD [1,3,7,10]. Moreover, COPD exacerbations are associated with a transient deterioration of endothelial function. This leads to an increased risk of macrovascular complications such as myocardial infarction and stroke. In addition, subsequent loss of pulmonary function is associated with a long-term increase in arterial stiffness [2,4,6,11,16]. In the acute period, all-cause mortality can be predicted by elevated cardiac troponin levels. Coronary artery calcification correlates with dyspnea, exercise capacity and all-cause mortality. This suggests an association between coronary heart disease and poor clinical outcome in patients with COPD[14,15,18]. Thus, identification of patients with high coronary artery calcium is important to ensure appropriate targeting therapy and cardiovascular risk correction. Current recommendations are mostly limited to individual cardiac or respiratory diseases [5,8,12].

Nevertheless, an integrative approach is warranted, especially because long-term data on patients with COPD and CHD are scarce. Smoking cessation is still the most important secondary prevention measure and will remain so for the foreseeable future. Concomitant COPD is undiagnosed in approximately 80% of patients undergoing coronary intervention[17,19,21]. This is mainly the case in early or moderate stages, in which the best preventive and therapeutic options are still available. Conversely, electrocardiographic signs of survived myocardial infarction are undetectable in 70% of patients with acute exacerbations of COPD. Clinical evaluation is hampered by frequent atypical angina pectoris, dyspnea or palpitations, leading to misinterpretation [9,13,20].

PURPOSE OF THE STUDY: To study the peculiarities of the clinical course of coronary heart disease (CHD) in comorbidity with chronic obstructive pulmonary disease (COPD).

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MATERIALS AND METHODS OF RESEARCH:

We examined 107 patients with comorbid COPD+IBS and 33 patients with isolated CHD in the departments of emergency therapy №1 and 2, cardiac resuscitation of Samarkand branch of the Republican Scientific Center of Emergency Medical Care and in the rehabilitation department of Samarkand regional branch of the Republican Specialized Scientific and Practical Medical Center of Cardiology.

Inclusion criteria of the examined patients were as follows:

- Clinical, laboratory and instrumental confirmation of the diagnosis of IBS and COPD;
- Males and females over 18 years of age;
- Consent of patients to participate in the survey.

Exclusion criteria for patients included in the survey are:

- Patient refusal to participate in the study;
- Patients with a history of systemic, oncologic and autoimmune diseases;
- Patients with purulent and chronic inflammatory diseases;
- Acute circulatory disorders of the brain;
- Profound neurological disorders, changes in psychological status and progressive cognitive disorders.

The European Society of Cardiology (ESC/AHA/ACC/WHF) 2020 guidelines were used to diagnose CHD. For the diagnosis of COPD, the 2018 GINA recommendation was used. When collecting clinical and anamnestic data in all patients, the presence of CHD symptoms (stable and unstable angina, vasospastic angina, myocardial infarction in the history), risk factors (smoking, hereditary predisposition, stress, hypodynamia, arterial hypertension, diabetes mellitus, obesity) were taken into account and the severity of COVID-19 course was studied.

STUDY RESULTS:

When studying the factors influencing the development and manifestation of CHD with concomitant COPD in the studied patients, it was found that 98 (91.6 %) patients smoked, 76 (71 %) patients had a history of inflammatory processes of upper and lower respiratory tracts, 45 (42,1 %) patients had a history of occupational harmfulness at work, 79 (73,8 %) patients had a history of psycho-emotional stress, 89 (83,2 %) patients had elevated cholesterol level, 81 (75,7 %) patients had increased body weight

According to WHO recommendations, an important prerequisite for the diagnosis of COPD is the

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№	Symptoms	CHD, n=33	CHD+COPD n=107
1	Cough: persistent intermittent infrequent during exacerbation	14 (42,4 %) 8 (24,2 %) 4 (12,1 %)	85 (79,4 %) 15 (14 %) 7 (6,6 %)
2	Dyspnea: - at rest - when performing household activities - when walking on flat ground at an unusual pace (more than 100 steps per 1 min) - When climbing to the 2nd floor	 4 (12,1 %) 12 (36,3 %) 5 (15,2 %) 4 (12,1 %)	 11 (10,2 %) 69 (65,4 %) 15 (14 %) 12 (11,2 %)
3	«"Whistling" breathing: - in the morning - none	 0 33 (100 %)	 98 (91,6 %) 9 (8,4 %)
4	Choking attacks: - were - none	 0 33 (100 %)	 100 (93,5 %) 7 (6,5 %)
5	Localization of pain: - behind the sternum - in the heart area - in the chest	 5 (11,7 %) 8 (26,5 %) 20 (61,8 %)	 89 (93,5 %) 10 (9,3 %) 8 (7,5 %)
6	Irradiation of pain: - to the left shoulder, arm - back and spine - To the right side of the chest - right arm	 3 (5,9 %) 13 (44,1 %) 14 (35,3 %) 3 (14,7 %)	 67 (62,65) 10 (9,3 %) 16 (15 %) 14 (13,1 %)
7	Relationship of pain: - with physical activity - with inhalation of cold air - with psychoemotional stress - with changes in weather conditions	 18 (53 %) 4 (12,1%) 7 (23,5 %) 4 (53,0 %)	 58 (54,2 %) 18 (16,8 %) 21 (19,1 %) 10 (9,3 %)
8	Suppressive effect: - from nitroglycerin within 1-2 min - delayed, more than 5 min from bronchodilators - from coronary and bronchodilators - from sedatives - from betaadrenoblockers: - positive - negative, leading to an attack of suffocation.	 25 (75,7%) 0 4 (12,2 %) 2 (6,1 %) 24 (72,7 %) 0	 56 (52,3 %) 6 (5,6 %) 41 (38,3 %) 3 (2,8 %) 1 (0,96 %) 0
9	Heart palpitations: - during physical exertion - emotional stress - at rest	 16 (48,4 %) 14 (42,4 %) 3 (9,1 %)	 78 (73 %) 16 (15 %) 13 (12 %)
10	General weakness at the end of the day, increased fatigue	27 (76,5 %)	99 (92,5 %)
11	Increased sweating	16 (48,5%)	80 (75 %)
	Increase in body temperature:		

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calculation of the smoking index, which is calculated as follows: the number of cigarettes smoked per day multiplied by the number of months in a year. If this value exceeds 160, smoking in this patient is a risk for COPD. In our study, the smoking index (SI) among the main group was 98.8±14.7 on average, whereas among patients with isolated CHD the SI was 44.8±8.7.

The degree of severity of respiratory disorders according to the values of PEF1 determined according to the recommendations of the European Respiratory Society was revealed: severe (with PEF1 < 50%) - in 23 (21,4%) patients, medium (with PEF equal to 50 - 69%) - in 54 (50,5%) patients, mild (with PEF1 > 70%) - in 33 (30,8%) patients.

The patients were divided into the following groups depending on the functional class: among the patients with CHD+COPD: I FC - 38 (35,5 %), II FC - 47 (43,9 %), III FC - 22 (20,5 %) (Fig.3.3). Among patients with isolated CHD there were significantly more patients with FC I - 13 (39,3%) and FC II - 15 (45,5%), and among 5 (15,1%) patients there was FC III.

At objective examination in 95 (88,7 %) patients with IBS+COPD pallor of skin and visible mucous membranes was noticed. Increased size of the thorax and widening of intercostal spaces were observed in 76 (71 %) patients with long progressive course of the disease. Many patients showed lowering of lower borders of lungs and decrease of their excursion (71 (66,3 %)). Percussion usually revealed a boxy sound (89 patients (83,1 %)) of different degree of severity. Auscultation revealed weakened (49 (45,8 %)) and rigid (58 (54,2 %)) breathing, prolongation of the exhalation phase (102 (95 %)). Dry, mainly expiratory, wheezes of different tonality were detected in 98 (91.5%) patients, medium- or large bubbling moist wheezes - in 46 (43%) patients; the latter were caused by difficulty in sputum evacuation, and their amount changed during expectoration..

Table 1.

Clinical symptoms of the combination of CHD+COPD

A number of changes were detected in the cardiovascular system. Heart rate increase (> 80 per 1 minute) occurred in 102 (95.3%) patients. At auscultation in 72 (67,2 %) patients muffled heart tones were detected, in 69 (64,5 %) patients - systolic murmur at the apex (in the absence of pathology of the valve apparatus), which was associated with dystrophic changes of myocardium under conditions of chronic hypoxia and hypoxemia (Table 1.).

CONCLUSIONS:

Our given data prove the fact that COPD leads to severe course of CHD, so for example, palpitations at physical load are found in 73% of IBS+COPD patients, while among CHD patients in 48,3% of patients. Or the control effect of nitroglycerin was 52,3%, when among patients with isolated CHD it was 75,7%, which shows that COPD comorbidity not only aggravates the course of CHD, but also reduces the effectiveness of the prescribed therapy and requires a special approach for timely provision of necessary assistance.

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24.