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PECULIARITIES OF THE CLINICAL COURSE OF CORONARY HEART DISEASE IN COMBINATION WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Abstract:

Coronary heart disease (CHD) in recent decades steadily occupies one of the leading positions in the structure of cardiovascular disease (CVD) treatment, disability and mortality among the socially significant population in the economically developed countries of the world. In Europe and North America there are 30-40 thousand patients with CHD per 1 million people. According to the Framingham study, in 40.7% of cases, angina pectoris is the first manifestation of CHD in men and in 56.5% of cases - in women. IHD is more common in men aged 40-65 years, in women of the same age - 40.4% [3,4,6,14].

Keywords: Lung Disease, Chronic Obstructive Pulmonary Disease, Cardiovascular Disease.

INTRODUCTION:

In Republic of Uzbekistan, as well as in other countries of the world, morbidity, disability and mortality among patients with CHD are not far behind other countries, as well as low adherence to treatment measures. for prevention and treatment of this disease[7,15,18].

Polymorbidity (a combination of different diseases in one patient) is another component of the relevance of the problem discussed. Polymorbidity is characteristic of older patients over 60 years of age. The course of the disease, treatment and prevention programmes largely depend on concomitant diseases, against which CHD occurs.

Coronary heart disease and chronic obstructive pulmonary disease (COPD) are often comorbidities. According to various authors, cardiovascular diseases, including coronary heart disease, have been identified in 62% of older COPD patients [1,2,9,12]. According to the European Respiratory Society, only 25% of cases are diagnosed in a timely manner. In Uzbekistan, the diagnosis of COPD is even lower. According to official data from the Ministry of Health of the Republic of Uzbekistan, there are about 1 million people with COPD in the country (an estimated 11 million people) [11,12,15,17].

The social factors that change the lifestyle and predispose to the mass spread of CHD and COPD can be considered as urbanization of society and disruption of the ecological balance. Sedentary lifestyle, smoking and poor diet associated with these processes are traditional risk factors for CVD and COPD [5,7,8,11].

All the above determines the relevance of the problem of combination of CHD and COPD, indicates the need to study pathophysiological features of occurrence, progression of clinical manifestations of comorbidity and to improve diagnostic and preventive measures, as well as the search for rational ways of treatment.

AIM OF THE STUDY:

To compare features of clinical course of coronary heart disease in patients with isolated coronary heart disease and coronary heart disease in combination with chronic obstructive pulmonary disease for further individualized approach to treatment.

MATERIALS AND METHODS.

173 patients were examined at Samarkand branch of Republican Scientific Center of Emergency Medical Care, therapeutic departments #1 and #2. Only male patients were included in the study in order to exclude the influence of primary hormonal factors on the results of examinations. The legitimacy of this approach can be explained by the fact that men predominate in the overall patient population, according to GOLD (2019), but at the same time the fact of increasing COPD incidence in the female population cannot be dismissed [6]. In addition, women have different pathophysiological mechanisms

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of small airway response to various etiological exposures to risk factors, in particular tobacco smoke [11]. All patients were divided into groups: Group 1 - COPD patients 35% (n=60); Group 2 - patients with combined COPD+CHD pathology 32% (n=58); Group 3 - patients with isolated CHD 33% (n=55) (Figure 1).

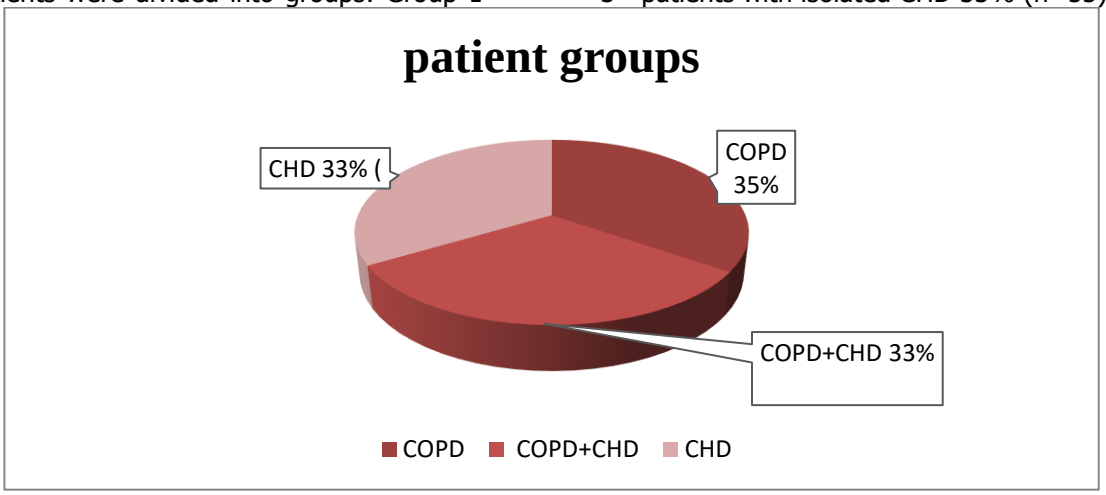

Figure 1: Distribution of patients according to pathology

The mean age of IBS patients was 62.45±12.49 years. This figure was comparable with that of patients with COPD and co-morbidities (COPD+IBS). Some age indicators have many unique values. Categorical indicators can be derived from them.

We have divided the age indicators into 4 categories of values:

0 - if age <55 years;
1 - if age 55 to 60;
2 - if age 60 to 65;
3 - if age >65 years.

The data are presented in Table 1.

Table №1.
Categorical age indicators

Age categories	CHD n = 58	COPD n = 60	CHD+COPD n =55
0	5,1% (3)	6,6% (4)	10,9% (6)
1	18,9% (11)	20% (12)	18,2% (10)
2	32,7% (19)	30% (18)	29,1% (16)
3	43,1% (25)	43,3% (26)	41,8% (23)

Table 1 shows that the majority of patients were in the age groups 60 to 65 (30.6%) and over 65 (42.1%). The age category up to 55 years old included 16 patients (9.2%) and from 55 to 60 years old 33 (19.1%). When analyzing the age structure of the groups, it should be noted that the distribution of patients with isolated COPD and CHD was not significantly different and had close values. In the group with a combined course of COPD and CHD, the patients of older age groups - over 65 years old (41.8%) - prevail.

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Table 2.
Main clinical and anamnestic parameters of the study groups.

Indicator	CHD	COPD	CHD+COPD	Reliability
Number of patients, n	60	58	55	
Age, years (95% CI)	62,6±12,5	62,45±12,49	63,87±12,7	
COPD duration, years (95% CI)	7,44±1,5	-	6,6±1,3	p1-3 < 0,05
IHD duration, years (95% CI)	-	7,8±1,7	7,1±1,4	
History of angina pectoris	0	1	1	
COPD stages (GOLD), n	60	-	55	
GOLD II, n (%)	22 (36,6%)	-	20 (36,4%)	
GOLD III, n (%)	27 (45%)	-	23 (41,8%)	
GOLD IV, n (%)	11 (18,3%)	-	12 (21,8%)	
Number of patients with coronary artery disease, n	-	58	55	
functional class II, n (%)	-	18 (31,1 %)	19 (34,5 %)	
functional class III, n (%)	-	27 (46,5 %)	26 (47,3 %)	
functional class IV, n (%)	-	13 (22,4 %)	10 (18,2 %)	

Indicator	CHD	COPD	CHD+COPD	Reliability
Heart rate, min-1 (95% CI)*	68,6±13,7	65,3±11,2	72,7±14,6	p1-2<0,05 p2-3<0,05

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SBP, mm Hg Art. (CI 95%)	120,89±24,2	127,2±25,1	112,7±21,3	
DBP, mm Hg Art. (CI 95%)	78,4±15,8	93,2±17,2	77,4±12,3	p1-3 < 0,05
NPV, min-1 (CI 95%)	21,2±4,24	18,3±3,4	22,8±4,15	
Body mass index, points (CI 95%)	20,8±3,7	22,8±2,6	19,93±2,1	p1-2 < 0,05 p1-3 < 0,05 p2-3 < 0,05
Smoker index, pack/year (95% CI)	20,7±3,2	20,8±3,3	30,3±5,8	p1-3 < 0,05 p2-3 < 0,05
Degree of dyspnea mMRC, scores (95% CI)	3,02±0,4	2,3±0,5	3,5±0,7	p1-2 < 0,05 p1-3 < 0,05 p2-3 < 0,05
Cough on a 6-point scale, points (CI 95%)	1,94±0,48	0,29±0,22	2,3±0,21	p1-2 < 0,05 p2-3 < 0,05
SpO2, % (CI 95%)	93,24±15,2	93,94±15,8	91,1±16,2	p1-2 < 0,05 p1-3 < 0,05 p2-3 < 0,05
FEV1, % (CI 95%)	50,05±6,25	86,32±7,3	40,8±4,8	p1-2 < 0,05 p1-3 < 0,05 p2-3 < 0,05

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RESULTS:

A correlation analysis of the relationship between the presence of COPD and CHD in patients with a concomitant course of COPD and CHD and the age of patients showed a correlation coefficient of r = 0.565, i.e. the relationship was medium, with a significance level of $p<0.05$. A similar analysis of the correlation between the presence of COPD and the age of patients revealed a weak correlation: r=0.338; $p<0.05$. In the group of patients with a combined course of COPD and CHD: r=0.912; $p<0.05$ revealed a strong correlation. When taking into account the effect of age on disease development in the total group (without differentiation by nosology), the correlation coefficient was r=0,781; $p<0,05$.

Thus, the obtained results indicate an unconditional relationship between age and clinical manifestations of the disease, primarily CHD and the combined course of COPD and CHD with a medium (in case of CHD) and high (in case of COPD and CHD) correlation. In addition, the findings are consistent with epidemiological indicators specific to the development of these nosologies [8,10,17,19]. Age is considered to be an independent and unchangeable risk factor for COPD and CHD. Consideration of this indicator is mandatory for a comprehensive assessment of the characteristics of the indices.

Anamnestic history of disease was analysed. Among patients with COPD, the median duration of illness was 7.44±1.5 (95% CI; 6.59-7.68) years from the onset of symptoms. In contrast, the median disease duration was 6.6±1.3 (95% CI; 6.2-6.8) years in the cohort with COPD and CHD, which was statistically significantly different from that of isolated COPD.

The presence of concomitant respiratory disease also adversely affected the average duration of history of coronary heart disease. Patients with isolated disease had an average of 7.8±1.7 years (95% CI; 7.3-8.1) of CHD. In contrast, patients with COPD + CHD had 7.1±1.4 (95% CI; 6.51-7.54) years, a decrease of 7%. At the same time there was a tendency to reduce the time of manifestation of clinical manifestations of the two nosologies, though without statistical significance ($p>0.05$). No significant correlations between age and disease duration were found (Table 1).

Based on the data presented, it is evident that the combined course of these nosologies significantly reduces the length of the history before the onset of symptoms. Combined with the analysis of age and nosological structure, we can see that the comorbid course of COPD and CHD has a statistically significant impact both on the severity of the disease and on the timing of manifestation of the main clinical manifestations.

As shown in Table 3, the group of patients with isolated COPD comprised patients with severe and extremely severe forms of the disease: there were 22 patients (36.6%) with moderate COPD, 27 patients with severe COPD (45%), and 11 patients (18.3%) with GOLD IV. In the observation group with a combined course of COPD and CHD, approximately the same structure of distribution of patients was observed: a moderate degree of severity was observed in 20 patients (36.4%), a severe degree in 23 patients (41.8%), and 12 (21.8%) had extremely severe COPD.

The study of functional class of angina among patients with comorbidities revealed 31.1% of II class, 46.5% of III class, and 22.4% of IV class, and among the patients with isolated angina 34.5% of II class, 47.3% of III class, and 18.2% of IV class (Table 1).

Thus, patients with III and IV class prevailed in the structure of the examined patients, which corresponds to the literature data [8, 9,11,13].The study of BP and DAP found that in patients with comorbid pathology there was, though not statistically significant, decrease in BP and DAP.

When studying the degree of dyspnea, we found that among patients with concomitant pathology, the degree of dyspnea was 3.5±0.7, with isolated COPD - 3.02±0.4 points, and in patients with CHD - 2.3±0.5 points. ($p<0,05$). While studying the saturation indices, we found out that in patients with comorbidities the index was statistically significantly reduced by 91,1±16,2%, and in patients with isolated COPD and CHD - by 93,24±15,2%; 93,94±15,8% respectively.

Further, the OEF1 indices were studied, which also revealed a statistically significantly reduced OEF1 in COPD+IBS patients 40.8±4.8% and in COPD patients 50.05±6.25%; IBS patients 86.32±7.3%.

CONCLUSIONS:

Thus, it can be concluded that the combination of different mechanisms of inflammation primarily has a pathological effect on the circulatory system, and secondarily on the respiratory organs. This statement is consistent with the fact that COPD is a systemic disease in which a generalised vascular inflammatory response with predominant involvement of the cardiovascular system develops in the early stages. This fact is reflected in the prognosis of patients with a combination of COPD and CHD: about half of all deaths in COPD patients are associated with existing cardiovascular disease [4,6,14]. COPD contributes to

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the mortality structure, increasing mortality from heart disease by 2-3 times [17]. This fact should be considered when managing patients with comorbid COPD and CHD, as well as when developing preventive programs.

LIST OF REFERENCES:

1. Насырова З. А., Курбонова Ю. Ю. К., Насирова Д. А. Особенности течения ишемической болезни сердца у больных с коморбидными патологиями //Вестник науки и образования. – 2020. – №. 1-1 (79).
2. Ташкенбаева Э. Н. и др. Destabilization of ischemic heart disease in patients with anxiety-depressive syndrome //Вестник экстренной медицины. – 2021. – Т. 14. – №. 1. – С. 11-18.
3. Ташкенбаева Э. Н., Насырова З. А., Мирзаев Р. З. Стратификация хронической ишемической болезни сердца в зависимости от методов диагностики и пути их лечения //Журнал кардиореспираторных исследований. – 2020. – Т. 1. – №. 3.
4. . МИ Камалова, С Хаминов, Б Эшболтаева Морфометрические особенности развития эпителия бронхов у кроликов в постнатальном онтогенезе
5. Элламонов С. Н. и др. Факторы прогрессирования артериальной гипертензии у больных в коморбидности с сахарным диабетом 2 типа //Журнал кардиореспираторных исследований. – 2021. – Т. 2. – №. 2.
6. Criner GJ, Connett JE, Aaron SD, et al. Simvastatin for the prevention of exacerbations in moderate-to-severe COPD. N Engl J Med 2014; 370:2201.
7. Chen W, Thomas J, Sadatsafavi M, FitzGerald JM. Risk of cardiovascular comorbidity in patients with chronic obstructive pulmonary disease: a systematic review and meta-analysis. Lancet Respir Med 2015; 3:631.
8. Ismoilov, O. I., Murodkosimov, S. M., Kamalova, M. I., Turaev, A. Y., & Mahmudova, S. K. (2021). The Spread Of SARS-Cov-2 Coronavirus In Uzbekistan And Current Response Measures. The American Journal of Medical Sciences and Pharmaceutical Research, 3(03), 45-50.
9. Dransfield MT, McAllister DA, Anderson JA, et al. β-Blocker Therapy and Clinical Outcomes in Patients with Moderate Chronic Obstructive Pulmonary Disease and Heightened Cardiovascular Risk. An Observational Substudy of SUMMIT. Ann Am Thorac Soc 2018; 15:608.
10. Farne HA, Cates CJ. Long-acting beta2-agonist in addition to tiotropium versus either tiotropium or long-acting beta2-agonist alone for chronic obstructive pulmonary disease. Cochrane Database Syst Rev 2015; :CD008989.
11. Global Initiative for Chronic Obstructive Lung Disea se (GOLD). Global Strategy for the Diagnosis, Man agement and Prevention of Chronic Obstructive Pul monary Disease: 2019 Report. www.goldcopd.org (Accessed on February 04, 2019
12. Horita N, Goto A, Shibata Y, et al. Long-acting muscarinic antagonist (LAMA) plus long-acting beta-agonist (LABA) versus LABA plus inhaled corticosteroid (ICS) for stable chronic obstructive pulmonary disease (COPD). Cochrane Database Syst Rev 2017; 2:CD012066.
13. Ingebrigtsen TS, Marott JL, Nordestgaard BG, et al. Statin use and exacerbations in individuals with chronic obstructive pulmonary disease. Thorax 2015; 70:33.
14. Jatene T, Biering-Sørensen T, Nochioka K, et al. Frequency of Cardiac Death and Stent Thrombosis in Patients With Chronic Obstructive Pulmonary Disease Undergoing Percutaneous Coronary Intervention (from the BASKET-PROVE I and II Trials). Am J Cardiol 2017; 119:14.
15. Rasmussen DB, Bodtger U, Lamberts M, et al. Beta-blocker use and acute exacerbations of COPD following myocardial infarction: a Danish nationwide cohort study. Thorax 2020; 75:928.
16. Rothnie KJ, Connell O, Müllerová H, et al. Myocardial Infarction and Ischemic Stroke after Exacerbations of Chronic Obstructive Pulmonary Disease. Ann Am Thorac Soc 2018; 15:935.
17. Samp JC, Joo MJ, Schumock GT, et al. Risk of Cardiovascular and Cerebrovascular Events in COPD Patients Treated With Long-Acting β2-Agonist Combined With a Long-Acting Muscarinic or Inhaled Corticosteroid. Ann Pharmacother 2017; 51:945.
18. Yang YL, Xiang ZJ, Yang JH, et al. Association of β-blocker use with survival and pulmonary function in patients with chronic obstructive pulmonary and cardiovascular disease: a systematic review and meta-analysis. Eur Heart J 2020; 41:4415.