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MEDICAL-ECOLOGICAL-SCIENTIFIC BASIS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE PREVALENCE AND PREVENTION IN THE POPULATION OF FERGANA VALLEY OF UZBEKISTAN

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Annotation

The results of epidemiological studies conducted in the population of the Fergana Valley of Uzbekistan are presented. Based on the results of this work, which was carried out for the first time, a table for forecasting chronic obstructive pulmonary disease and an algorithm for early detection, as well as a medical-ecological cartography were developed and recommended for public use. Such activity reduces the "aggression" of this disease by 3 times. It dramatically increases the effectiveness of treatment and reduces the risk of pharmacotherapy up to 100.0 percent.

It has been 20 years since the term "chronic obstructive pulmonary disease" (COPD) was adopted, and it includes only chronic obstructive bronchitis and pulmonary emphysema. The term was adopted in 2002 at the XII Congress of Russian pulmonologists (Moscow, November) [12].

COPD has the biggest and, so to speak, "intractable" problem, and it is increasing year by year, not just decreasing or stagnating, but deepening and multiplying. The content of the work is the question of taking this problem, COPD, under absolute control. Despite effective pharmacotherapy of the disease, its control remains at a very low level until now [6, 7, 18]. As a result of this, a dangerous epidemiological situation has arisen in relation to COPD on a global scale and it is predicted to become more complicated: 1) population death from COPD has increased up to 15 times in recent years (DALY, 2020); 2) in 75.0 percent of clinical situations, COPD is not detected on time (IBEYAROS, 2000); 3) in 73.0 percent of cases, the disease does not begin with specific symptoms; 4) due to the fact that the frequency of the actual spread of the disease among the population is estimated according to official statistical indicators, it is still not clear in most countries, and even in developed countries, every eleventh patient with COPD is neglected, does not receive benefits or results from medical services in time [10]. The main and main reason for this is considered to be insufficient epidemiological research on the disease. Until now, epidemiological descriptions of the disease and its risk factors have not been fully revealed and defined. Such an ongoing modern situation requires not only to increase the scope of epidemiological research, but also to find and improve its modern directions (medical-ecological pharmacocontrol, pharmacoepidemiology, pharmaco-economic and active preventive personalization to "base points", as well as demarcation). In this study, solving these issues was taken as a "first-line task" and fully solved.

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In addition, our analyzes confirmed that new scientific topics have emerged and become relevant in the issue of COPD [3, 4, 20]. For example, the epidemiology of "occupational factors" of COPD has not been sufficiently studied, and the prospective (long-term) epidemiological monitoring, which is necessary to confirm them as risk factors, has hardly been carried out, and in the second decade of the 21st century, the especially unacceptability of the ecological situation has increased the need for these meaningful and oriented scientific topics. The eco-stress factor is 400 kg/year per person, and the issue of studying them in connection with the epidemiological and preventive "edges" of COPD is considered to be a priority scientific direction that is lagging behind or "dormant" in modern science. Solving it can give "key" important results in stopping the "invasion" of COPD [2, 3, 5, 11, 24].

The second issue that is becoming more relevant in the topic of COPD is clarifying its pharmacotherapy or eliminating "its iatrogenic part". Because, in the available scientific sources, programs and algorithms for the treatment, pharmacocontrol and pharmacoprophylaxis of COPD are given in different ways, and there are often contradictions. Elucidation of these is suggested as an urgent scientific topic, and pharmacoepidemiological studies are recommended to direct the full power of treatment to the invisible part of the "tip of the disease iceberg" [21, 23].

The aforementioned became the basis and impetus for the dissertation work, which is carried out with the goal of clarifying the medical-ecological scientific bases of the distribution, pharmacoepidemiology and prevention of COPD in the conditions of the Fergana Valley.

According to the research design, it is considered an observational, non-experimental, one-time, prospective, retrospective, analytical, epidemiologic investigation with ecopharmacoscreening. As its object, the elderly population of Andijan and Namangan geographic-ecological regions of the Fergana Valley and the population of patients with COPD were taken..

4 epidemiological studies were organized and carried out: a one-time epidemiological study in the population of Andijan (1279 residents were examined, 718 were men and 561 were women), a prospective epidemiological study in the conditions of Namangan (in 2010-2020, the emergency medical center was opened in the Namangan branch, with COPD ≥ 18 - 1481 men and women aged 79 were examined), an eco-epidemiological prospective study was carried out in the Andijan population (≥ 2-year monitoring and echoscreening results of patients treated with COPD in all district and regional cities aged 18-79 in treatment facilities were studied) and in the Namangan population 11 - annual prospective pharmacoepidemiological monitoring (1481 men and women ≥ 18-79 years of age with COPD observed and treated in the Namangan emergency medical center in 2010-2020 were taken as its object).

A total of 2,760 residents were examined in the study. Standardized and unified questionnaire, biochemical, instrumental and pharmacoepidemiological methods were used, which fully meet modern international requirements. Spirometry and peak flowmetry were used to study external respiratory function. Eco-epidemiological research monitoring was carried out in Andijan for 5 years using the "registered epidemiological investigation" method. A standardized statistical card was developed and the dynamics (in thousands of tons) of harmful substances released into the atmosphere in the region (from stationary sources, mobile sources, and general waste) were studied and evaluated. The data

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were obtained from the ANII laboratory of the environmental monitoring committee in the region, the Andijan hydrometeorological center, and the regional sanitary-epidemiological center. COPD and its risk factors were assessed according to the criteria and recommendations of GOLD-20 and the European Respiratory Society [28]. Epi Info, SpSS Statistics, and Excel 2021 of the Microsoft office suite were used to evaluate the obtained research results.

The results of the research made it possible to make significant, potential and effective conclusions. In the conditions of the Fergana Valley, specific epidemiological details and the 11-year trend of COPD were revealed: 1) COPD is observed with a detection frequency of 44.6 and 55.4 percent in the population of men and women living in the eco-climatic and medical conditions of Namangan (R< 0.05); 2) 98.5 and 99.3 percent are determined in the aboriginal population, 1.5 and 0.7 percent in the immigrant population; 3) almost twice as many cases of COPD are confirmed in rural areas; 4) COPD prevalence is affected by social status, type of work, level of education and occupational harmful factors. COPDhemphysematous (COPDef) phenotype is determined with a prevalence of 14.3% (from -40.4% in men and -32.8% in women; R = 0.68) and is confirmed by an 11-year trend of reduction to -0.2%. The trend of increasing COPD has continued in the last 11 years, significantly "stronger" in women than in men. This result is close to the data of other studies and almost confirms them [2, 5]. Bronchitis phenotype of COPD ≥ 18-79 years of age in the Namangan population is defined with a prevalence of -48.1% (from -49.2% in women and -52.9% in men), with an "increase" of -0.6% in 11 years.

ASO syndrome is confirmed in Namangan population with a prevalence of 15.3 percent (-14.1 percent in men and -16.1 percent in women). This figure is -13.5% higher than the European population and -10.0% higher than the US. In the last 10 years, its rate has been increasing year by year, it is confirmed by the rate without difference in men and women (13.7 and -13.6 percent).

OSO is confirmed as a "non-age-selective and widespread" disease, that is, it is considered to be an equally urgent problem for the population of almost all ages. But in the analysis of its 11-year trend, it was confirmed in the study that the factors of 18-44 and 60-74 years of age are statistically significant in the development of COPDef and other types.

The observation of prospective, 11-year epidemiological monitoring shows again that the trends in the spread of risk factors of OSOK in the population of the valley (in the Namangan section) are characterized.

For example, during 2010-2020, the main risk factors of the disease in the population of patients with COPD (≥ 18-79 years old) were confirmed with the following prevalence: KGT -91.5 percent (2010) and 42.4 percent (2020), i.e. 11 - showing a decreasing trend of -49.1% during the year; obesity representing a tendency to decrease from -6.4 and -46.7 percent, i.e. -40.3 percent; smoking -2.1 and -0.00 percent, alcohol consumption -0.00 and -0.00 percent.

The frequency of detection of total risk factors (XO) increased from 3.9% to -15.4% in 11 years, that is, in the conditions of Namangan, XO is characterized by a tendency to increase by 11.5% or 3.6 times. The frequency of detection of COPD risk factors in men is -14.79 percent (in 2010) and -32.0 percent (in 2020), that is, they are confirmed by an increase of 17.2 percent or 2.2 times. In women, the total XO is observed with a detection frequency of -12.78 percent (in 2010) and -25.15 percent (in 2020).

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Over the past 11 years, the prevalence of XO in women is confirmed by a tendency to increase to -12.27% or 2.1 times. Smoking and alcohol consumption - not determined.

These results confirm the ongoing trends on the international scale in relation to the general COPD [14, 20, 22] and it was shown separately that the attitude to the primary and secondary prevention of COPD should be changed sharply, taking into account the specific aspects in the conditions of the valley, and the need to take specific (local) comprehensive measures in this direction. originated. In particular, the results of the research will be important in this.

Age is undoubtedly confirmed as a strong risk factor of COPD, according to the results of 11-year monitoring, more specifically, as a "strong risk factor" of copd in valley conditions. Early detection of this strong risk factor “smoothes” or “slows down” the course of COPD in up to 50.0 percent, according to our prognostic analysis.

Researchers also do not deny the strong role of this risk factor in other non-infectious diseases, including pulmonary emphysema and obstructive chronic bronchitis, that is, COPD [2, 5, 13].

In the study, the role of comorbidity in the origin and progression of COPD was studied, and its 11-year trend in the population of the valley (in the Namangan section) was studied and evaluated.

4 diseases are mainly confirmed as co-morbidities of COPD: arterial hypertension (AH), dyslipidemia (DLP), QD2 type and chronic kidney disease (CKD).

COPDef AG -24.2 percent, COPDef -DLP 50.0 percent, COPD -QD2 6.3 percent and COPD -BSK are observed with 19.5 percent frequencies. With the same trend of comorbidity, other types of COPD are also expressed and confirmed, or the frequency of differences is not significant.

In the conditions of this situation, that is, the consideration of comorbidity in the origin, course and complications of COPD acquires preventive and strong therapeutic value. Information similar to these results was also "mentioned" in foreign studies [10, 15, 16, 17, 19].

For the first time in the conditions of Uzbekistan, a pharmacoepidemiological, 11-year, monitoring was carried out dedicated to COPD, and according to our conclusion, scientific and practical information was obtained: 1) pharmacotherapy of COPD is aligned with international standards by more than 70.0% on average; 2) In the treatment of copd, drugs belonging to 9 groups are mainly used: IGKS, antileukotriene drugs (ALP), long-acting ß2-agonists (DTBA), long-acting anticholinergic drugs (DTAXP), short-acting ß2-agonists (QTBA), basic inflammation Antibiotics (BYaQP), mucolytics (Muk) and TP and theophyllines (TF).

During the 11th year, the result of the use of IGKS improved by 1.8% (from 72.7% to 71.5%), the use of ALP increased by 2.1% (from 49.6% to 51.8%), and the use of DTBA remained unchanged (63.6%) remained, the frequency of use of QTB remained almost unchanged (from 62.9 to 62.6%), the use of basic anti-inflammatory drugs improved by 3.8% (from 9.8% to 13.6%), the frequency of use of AXP decreased by 0.8% (60 .8 percent to 60.0 percent); "TP + Muk" preparations were used in all years with indicators higher than 90.0%, and it is necessary to draw attention to this group: because this approach does not correspond to international recommendations, they are considered as "second or third line preparations". The use of combination drugs has been higher than 50.0 percent for 11 years, and the rate of its use has increased by 1.7 percent during these years.

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These results undoubtedly improve the development and implementation of pharmacotherapy and pharmacoprophylaxis programs of COPD in 8 directions.

These results differ from the data of other researchers because they are comparatively higher [25, 26, 27].

In the study, basic information was collected and based on them, an algorithm for the prevention of COPD was developed, which was limited to the eco-epidemiological directions, cartography and conditions of the valley.

The requirement to summarize the final conclusions of epidemiological studies in such an order is also approved and/or fulfilled in international studies [9, 21, 22].

In the conditions of Namangan, 3 prognostic tables were developed for emphysematous, bronchitis ASO forms of OSOK, taking into account the risk factors, and recommended for practical activity. They showed that the risk of developing all types of COPD is expressed as "very strong", "strong", "moderate" and "low" depending on obesity, AG, KGT, DLP, BSK, QD2 type, age, smoking and alcohol. comes out.

Based on the results of the research, a limited algorithm for the prevention of COPD in the Namangan section of the valley was developed and introduced for operation. It was confirmed that: 1) when using it, the risk of COPD complications is reduced by three times; 2) the frequency of early detection of COPD increases to 73.0%; 3) the level of economic profit will increase by 25.0%; 4) The risk of "iatrogenicity" of OSOK pharmacotherapy reaches 100.0%.

A large part of the study was conducted in Andijan region, and a 2-year eco-epidemiological screening was carried out covering the population of all districts and cities of the region. The main results: 1) Andijan region was approved to be included in the regions with a high incidence of COPD: 2) "Medical-ecological cartography of COPD" was created for Andijan; 2) The cartography of cities and districts with "high risk of COPD", "moderate risk of COPD" and "low risk of COPD" was divided. The following was confirmed in the eco-screening: it was confirmed that the three regions of Andijan, mentioned in the 5-year retro-screening, emit the most harmful substances into the air. For example, it was found that the amount of waste released from the city of Andijan is almost 1.5 times more than the amount of waste from other cities and districts of the region.

A two-year retrospective ecoepidemiological screening was carried out in the population of patients with COPD treated in all city and district treatment facilities of the region, taking into account ecomils. The prevalence rates of COPD were determined to be 50.1% in men and 43.9% in women, and the frequency of COPD prevalence in Andijan population was confirmed as follows: 17.9% in ≥ 20-39, 34.0% in ≥ 40-49, 25 in 50-59, 7 percent, 12.6 percent at 60–69, and 10.5 percent at ≥ 70 years of age.

Districts and cities with a high, medium and low prevalence of COPD were identified, and most of them, ecomils (excessive emissions into the environment - organochlorine compounds, silicon, cultural and organic dusts) and occupational factors, which have a negative effect on their epidemiological indicators, were confirmed.

In the eco-epidemiological screening, the chronobiology of COPD was studied and evaluated, taking into account the conditions of Andijan. For example, it was confirmed that winter, spring and autumn

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are considered the most "pathogenic - unfavorable" seasons for the origin and recurrence of COPD. It has been confirmed that the risk of COPD increases by 3 times depending on the season.

The risks of occurrence or complication of COPD by months were studied and analyzed. It has been proved that March, April and December are considered to be the months when the most unfavorable epidemiological conditions for COPD arise. On the contrary, May and July are confirmed as "relatively sanogenic months".

These data are partially close to the data of other studies, but they differ in that they express the effects of climatic and meteorological factors more strongly, compared to COPD [1, 8].

In general, the results of the study show that the frequency of detection of COPD depends on ecometeoclimatic XO in more than 95.0 percent of points. Taking them into account is of primary preventive and therapeutic importance in preventing the "intervention" of COPD.

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