

Mamatalieva Janona Alimjanovna, teacher
Fergana Public Health Medical Institute
Uzbekistan, Fergana

CLINICAL AND EPIDEMIOLOGICAL FEATURES OF STROKE IN THE FERGANA VALLEY

Annotation: The aim of the study was to study the influence of the main meteorological factors (relative humidity, atmospheric pressure, ambient temperature and duration of sunshine) on the course of coronary heart disease in the climatic conditions of the Fergana Valley.

Key words: clinical and epidemiological features, stroke, Fergana valley,
Relevance

Meteorological factors, according to studies conducted under the auspices of WHO, are considered as external risk factors that can negatively affect the functioning of all systems of the human body, as well as the course and outcome of various diseases, including cardiovascular diseases (CVD). Back in 1999, WHO Director-General Dr. Gru Harlem Brundland noted that the impact of climate change on people should be at the center of health monitoring. Climate change is not only a problem of today, but perhaps even more a problem of the future.

The study of the climatic aspects of coronary heart disease is becoming especially relevant in connection with the upcoming global climate change on the Globe. Thus, according to the UN (2001), in 100 years the average annual air temperature on the planet will increase by an average of 5.8 oC. This trend cannot but affect the climate of Uzbekistan. So, according to scientists of our country, over the past 100 years, the average annual air temperature in Tashkent has increased by 1.2 oC, and in the Fergana Valley only over the past 30 years, such warming has amounted to 0.3 oC. This has already led to the aridization of the territory of our country, a decrease in river flow and an increased frequency of droughts, superimposed on the intensification of anthropogenic desertification and

environmental pollution. This, in all likelihood, is one of the main reasons for the deterioration of epidemiological indicators of morbidity and "endpoints" from coronary heart disease, including in Uzbekistan, as a result of a decrease in the reserves of the cardiovascular system. The latter in a hot climate is one of the main factors that reduce the compensatory capabilities of the body.

The above suggests that the study of the correlation of the incidence of coronary heart disease with certain meteorological factors is an urgent problem. The solution of these issues in the climatic conditions of Uzbekistan is of considerable interest, both in terms of scientific developments and real meteorological prevention of coronary heart disease.

The aim of the study was to study the influence of the main meteorological factors on the course of coronary heart disease in the climatic conditions of the Fergana Valley.

Material and methods

The observation material was 4859 cases of deterioration of the condition of patients with coronary heart disease living in Fergana over a 3-year period (1997-1999), registered on the basis of appeals to the ambulance station, the Fergana branch of the Republican Scientific Center for Emergency Medical Care of the Ministry of Health of the Republic of Uzbekistan and therapeutic departments of AndGosMI clinics. In our study, 57.6% of patients were women and 42.4% were men.

The study was conducted retrospectively on the basis of copying data from medical records.

According to the agreement, data on the actual levels of meteorological parameters for 3 years (1997-1999) at 6 hour intervals were copied from the logs of the Fergana Hydrometeorological Center. Based on these data, a bank of information on meteorological factors of the first order has been accumulated: atmospheric pressure (in mb), air temperature (in C⁰), relative humidity (in%) and duration of sunshine (in hours).

Own data and discussion

The influence of relative humidity (RH) on the development of coronary heart disease (various forms of angina pectoris, myocardial infarction) in the studied years was studied.

The complex of elements installed during the period of high relative humidity in the studied region is unfavorable. It is characterized by variability in humidity levels and an increase in cases of coronary heart disease. In all three analyzed years, a regular variation in the frequency of coronary heart disease was found, which is associated with high humidity: their maximum frequency reaches at humidity levels 92-100% (24,0%, 35,3%, 18,4% in 1997, 1998, 1999, respectively), the decline in morbidity is observed in days and months with less humidity - 47-55% (10,7%, 9,7%, 9,7%, respectively).

When comparing the average annual characteristics of the incidence of coronary heart disease with different levels of atmospheric pressure (AtD), a close, direct correlation with the amplitude of atmospheric pressure was found.

So, in 1997, the maximum frequency of various forms of coronary heart disease (26.4%) was noted with fluctuations of AtD 971-975 mb, the smallest number of coronary heart disease (0.8%) was observed with ATD differences of 945 mb or less ($r=+0.95$, $P<0.001$). In 1998, there was also an increase in the incidence of IHD patients from 0.1% (with AtD of 945 mb or less) to 30.0% (with AtD of 971-975 mb) ($r= +0.96$; $P<0.001$). Similar trends were noted in 1999 - an increase in the incidence of coronary heart disease from 0.2% (AtD 945 mb or less) to 35.0% with AtD 971-975 mb ($r= +0.89$; $P<0.01$).

The results of the analysis of the incidence of coronary heart disease and fluctuations in ambient temperature (FA) during 1997 showed an increase in the incidence of coronary heart disease from 0.2% (with FA -8.70 C and below) to 16.6% (with FA 25.4-28.70 C and more) ($r= +0,93$; $P<0,001$). During 1998, a hot dry summer was an unfavorable risk factor for patients with coronary heart disease. The incidence of coronary heart disease increased in direct dependence on the level and fluctuations of FA from 0.3% at FA -8.70S or less to 14.9% at FA 22-25.30S ($r= +0.79$; $P<0.01$). The third year of the analysis of the dynamics of the incidence

of coronary heart disease also showed that the smallest number of cases of coronary heart disease was detected at low levels of FA (-8.70 C and below) 0.1% and an increase in its indicator was revealed with fluctuations in FA within a low temperature - 4.8-8.30C (15.8%) ($r= +0.71$; $P<0.05$).

The increase in the incidence of various forms of coronary heart disease in conditions of elevated ATD and FA can be explained as follows. Depending on the leading meteorological factor (temperature or AtD), hypothermic or hyperbaric hyperoxia and hyperthermic or hypobaric hypoxia may form. Severe weather hyperoxia leads to the development of secondary hyperoxic hypoxia in the body.

One of the objectives of this study was to identify the relationship between the incidence of coronary heart disease and the duration of sunshine (SS)

When analyzing the incidence of coronary heart disease, it was noted that a significant increase in the incidence of coronary heart disease in the analyzed years was noted with fluctuations in SS indicators from 6.6 to 13 hours (11.0%-14.4% in 1997; 15.4% - 17.1% in 1998; 13.6% - 19.2% in 1999). The minimum level of circulation of patients with coronary heart disease was noted with a short duration of SS - from 1.3 to 3.9 hours, the indicators ranged from 4.5%, 5.1% and 4.7% over the years, respectively. An increase in the incidence of coronary heart disease has a direct correlation with an increase in the duration of exposure to SS ($r=+0.79$; $P<0.01$).

Conclusions

The data obtained make it possible, on the one hand, to predict the meteorologically conditioned decompensation of coronary heart disease and to carry out meteorological preventive measures, on the other hand, they assume a certain clinical effectiveness of environmental protection measures at the level of an entire region or population.

There is an obvious need for constant clinical and meteorological monitoring of the region with the organization of "targeted" primary, secondary and tertiary preventive measures for coronary heart disease.

It is advisable to create a unified meteorological and meteorological information monitoring system in the region, which allows for comprehensive climatometeorological and clinical management of the incidence of coronary heart disease. The data obtained by us indicate that the problem of the regional specifics of the formation of coronary heart disease in the conditions of the sharply continental climate of Uzbekistan, especially in the Ferghana Valley, is extremely relevant and has not only medical, but also national economic significance.

To develop practical recommendations for the prevention of ischemic atherothrombotic stroke for neurologists, cardiologists, vascular surgeons. To develop a program of primary and secondary prevention of ischemic stroke, taking into account the regional characteristics of epidemiological indicators for Fergana valley. Implement the developed set of measures to prevent vascular diseases and reduce mortality and disability from strokes and myocardial infarctions in Fergana Valley, which will reduce morbidity, mortality and disability due to vascular pathology of the brain and heart. Together with specialists not only in the field of healthcare, but also in social, economic and other spheres, to develop primary and secondary preventive measures to improve the quality of life of patients with ischemic stroke, which will significantly reduce the human and economic losses of society.

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