Volume 20 Issue 65
Originally issued as B4



Global Journal of human-social science: B
Geography, Geo-Sciences, Environmental Science & Disaster Management
Volume 20 Issue 4 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-460X & Print ISSN: 0975-587X

Glaucomatous Process in Conditions of Sharply Continental Climate: Chronobiological Clinical Features and Forecasting Issues

By Ne'matjon S. Mamasoliev, B. M. Nazarov & Ziyadullo N. Mamasoliev

Abstract- The data of the general literature testify that at present glaucoma and or glaucomatous processes (GP) still remain in the leading group of diseases leading to "ophthalmocontinium" (blindness, disability, decay of visual functions), regardless of place of residence and standard of living (1,2,3,). Researchers agree on the purpose of the distribution of GP in various climatic-meteo -geographical regions around the globe and or within individual countries and their dependence not only on epidemiological and genetic factors, but also on meteorological (9,14), social (4), climatic (8 , 15) and ethnic factors (5.7).

At the same time, with regret, representatives of many large ophthalmological schools argue that the percentage of blood glucose from blood glucose is high and this allows glaucoma to be considered a medical-social-economic disease (15), which is quickly moving forward on the priority plan with AIDS, TB with systematic infection and Non-communicable diseases (10,11).

GJHSS-B Classification: *FOR Code: 040199*



Strictly as per the compliance and regulations of:



© 2020. Ne'matjon S. Mamasoliev, B. M. Nazarov & Ziyadullo N. Mamasoliev. This is a research/ review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Glaucomatous Process in Conditions of Sharply Continental Climate: Chronobiological Clinical Features and Forecasting Issues

Ne'matjon S. Mamasoliev [α], B. M. Nazarov [σ] & Ziyadullo N. Mamasoliev [ρ]

Abstract- The data of the general literature testify that at present glaucoma and or glaucomatous processes (GP) still remain in the leading group of diseases leading to "ophthalmocontinium" (blindness, disability, decay of visual functions), regardless of place of residence and standard of living (1,2,3,). Researchers agree on the purpose of the distribution of GP in various climatic-meteo -geographical regions around the globe and or within individual countries and their dependence not only on epidemiological and genetic factors, but also on meteorological (9,14), social (4), climatic (8 , 15) and ethnic factors (5.7).

At the same time, with regret, representatives of many large ophthalmological schools argue that the percentage of blood glucose from blood glucose is high and this allows glaucoma to be considered a medical-social-economic disease (15), which is quickly moving forward on the priority plan with AIDS, TB with systematic infection and Non-communicable diseases (10,11).

I. Introduction

Today, about 60.5 million people in the world suffer from glaucoma. It is predicted that this year (by 2020) it will increase to 79.6 million (12). Analysis of modern literature is intended to assert the key points in the problem of GP: a) the development of issues of prevention of GP are among the most important scientific and practical problems: b) if there is an urgent need for active and widespread measures for its early screening (prenosological) diagnosis, treatment and prevention, c) epidemiological study, clinical and meteorological observation and active prevention of the population and patients with GP in different climatic and geographical zones of the globe is a decisive saving factor in the fight against the emergence of "ophthalmocontinuum" from glaucoma, d) development of new equipment, the introduction of modern treatment methods (medication, laser and surgical), based on the presentation on the etiology and pathogenesis of GP, do not lead to a decrease in life-threatening complications of glaucoma (6,13).

The purpose of the research is to study glaucomatous processes in a sharply continental climate, develop a system for forecasting and meteorological prevention of glaucoma among the population.

II. Material and Methods

To achieve this goal, we have developed and used a special dynamic observation map, consisting of clinical and meteorological parts, which corresponded to international experiments in recording the ceiling dynamics in patients and fluctuations in meteorological conditions.

The map was used for studying and measuring atmospheric pressure (AP), air temperature (AT), relative air humidity (RAH) and solar glare (SG) for the development and course of the GP.

In the conditions of the regional eye dispensary of Andijan (the city's climate acquires a sharply continental character : cloudy weather, frequent precipitation, strong winds are rare, winter is stable, spring and autumn are warm, summer-dry and hot) using the method of 3-year clinical meteorological studies examined and analyzed 1112 patients with GP at the age of 15 - 70 years. There were 401 (36.0%) men and 711 (64.0%) women.

In the conditions of the regional eye dispensary, special cards were used to register the calls of the population about glaucoma with an accuracy of minutes: a chart-graph of the appealability was built with a conditional allocation of the time of day with a high, average and reduced circulation of the GP, the role of meteopathic effects of atmospheric processes was studied V.F. Ovcharova (1982).

In the course of three years of clinical meteorological observation of patients with GP in the conditions of the Andijan regional eye dispensary, a periodic review of meteorological and weather factors from the journals TM-1, TM - 12 and TM - 15 of the local hydrometeorological department was obtained. solar fusion, total solar radiation, AP, AT, RAH, SG, amount of precipitation and atmospheric phenomena. The ratios of the frequency of GP in the daytime and nighttime were

Author α: MD, Professor, Head of the Department of 1st Internal Medicine, Cardiology and Emergency Medicine, Faculty of Advanced Training and Retraining of Physicians, Andijan State Medical Institute, Andijan, Uzbekistan. e-mail: author.uzb@mail.ru

Author σ σ: MD, Professor assistant, Head of the Department of 1st Internal Medicine, Cardiology and Emergency Medicine, Faculty of Advanced Training and Retraining of Physicians, Andijan State Medical Institute, Andijan, Uzbekistan.

© 2020 Global Journals

recorded by months and seasons during the year, the average daily, maximum and daily variability of each meteorological element was calculated with the characteristics of the noted phenomena. To determine the importance of individual meteorological factors (MF) in the development, flow and softening of the GP, the method of multivariate analysis (Razorenkov G.I. et al, 1985) and the functional model of statustometry (Ivchik T.F. et al. 2001) were used. Prediction of meteotropic reactions was carried out according to the method of Z. Zununov (2002).

During the statistical processing of the obtained data, the Spriman method, Microsoft Excel program, nonparametric Velikikson test, paired and unpaired Student's tests, covariance-regression analysis with determination of β-coefficients and odds ratios were used. The critical level of statistical significance was taken as the probability of an error-free prediction equal to 95% ($P < 0.05$).

III. Results and Discussion

The introduction of methods of medical forecasting of meteorological conditions leads to an improvement in the quality of life and the equivalents of "healthy life years" at the population level. It is from this position that this problem has become a priority in all climatic and geographical regions of the world. Our analyzes in this direction showed that under the conditions of the sharply continental climate of the Fergana Valley (Andijan), spring and summer turned out to be comparatively pathogenic in the development of HP, while autumn and winter are less dangerous seasons. Thus, the most frequent GPs were registered in two seasons - spring (32.6%) and winter (32.6%).

Compared with the imaginary frequency, they were detected in summer (17.9%) and autumn (17.0%). The same tendencies were established with all forms of HP in spring, summer, autumn and winter, respectively, with the following frequent incidence: acute-angle glaucoma (OAG) - 34.4%, 16.7%, 22.2% and 26.7% each (differ in 2 times, $P<0.01$), angle-closure glaucoma (ZUG) - 36.9%, 20.0%, 18.1% and 25.0% each (differ by 2.4 times, $P<0.01$), mixed glaucoma (MG) - 19.2%, 34.6%, 19.2% and 26.9% each (differ by 1.3 times, $P<0.05$) and acute attacks of glaucoma (AGA) - 30 each , 2%, 9.3%, 2.3% and 58.1% (vary 29 times, $P<0.001$). The chronobiological features of the development of HF in different months of the year under the climatic conditions of the Fergana Valley (Andijan) were analyzed , and somewhat different regularities were approved. Thus, with regard to the development and clinical manifestation of GP, the most unfavorable months of the year were March, February, May, and April; January, September, June and October were comparatively less pathogenic ($\tau = +0.94$, $P < 0.001$).

In different months, depending on the degree of disturbance of the meta-factors of the studied region of the Fergana Valley of Uzbekistan, SOs are characterized with the following frequency indicators: in March-14.4%, in February - 34.8%, and in May - 13.5%, in April - 12.7 %, in January - 9.8%, in June - 8.4%, in September-2.0% and in October - 5.2%. With an imaginary frequency, more than 7 times less frequent, were detected in September and October. During the year, GPs were detected with a difference in frequency of 12.4% ($\tau = +0.94$, $P < 0.001$).

Further, it can be seen from our data that special ophthalmological and clinical symptoms (mixed injection) have a clearly pronounced seasonality: clinical manifestations of GP (ocular and extraocular) with the greatest frequent increase are detected in summer (with an increase to 33.6%) and in the spring (with an increase to 31.8%), during the year, low rates of pathology symptoms were observed - in the fall (20.1%) and winter (14.5%). "Clinical disturbance" of the HP during the year, depending on the fluctuations of atmospheric elements (AP, AT, RAH and SG) differ by more than 2.3% times ($P<0.001$). Thus, decreased vision and ophthalmic hypertension in different seasons of the year were observed with a difference in the following levels: in the spring - 33.2% and 34.4% each, in the summer - 30.9% and 30.4% each, in the fall - 20.0% each. and 20.0%, in winter - 15.9% and 15.1% each.

Eye pains and headaches were also observed with a difference in different seasons of the year: in spring - 34.0% and 31.9% each, in summer - 30.4% and 23.9%, in autumn - 22.8% and 23, 9%, in winter - 13.2% and 13.3% each.

The detection rate of extraocular symptoms (nausea and vomiting) fluctuated with a difference in levels of more than 3 times ($P < 0.01$): the highest frequency is observed in spring (30.2%) and summer (36.6%), low rates are observed in autumn (20.8%) and in winter (12.4%).

Thus, under the conditions of the sharply continental climate of the Fergana Valley of Uzbekistan, a relationship has been established between MF and the clinical course of GF: there is a seasonality in the progression of clinical manifestations of GF under the influence of an unfavorable meteorological regime, which manifests itself with sharp shifts in the indicators of clinical and ocular response in patients with HF during fluctuations in atmospheric processes. Further, on the basis of generally accepted mntodology using non-parametric statistics methods (χ^2, the Pearson and Spearman correlation coefficient), forecast tables, bioclimatograms and the GP meteorological system have been developed in accordance with the levels of fluctuation of meteorological factors of the first order - AP, AT, RAH and SG.

© 2020 Global Journals

Based on the data obtained in this direction, it was confirmed that the total risk of HP development and acute attacks of glaucoma and or their complications in accordance with the levels of MF fluctuations increase with the following regional specifics: due to an increase in the level and fluctuations of AD, the risk of HP development and or complications increases by 25, 0%, the assumed level of the risk of developing HF does not increase by 24.2% with an increase in SG, this2 MF turned out to be a priority in the studied region and under the influence of their risk of GP development increases more than 8 times.

Presented in tables and bioclimatograms, these materials are recommended for clinicians and practitioners are recommended as a working tool for daily use in the development of recommendations for the rotation of the lifestyle of patients with GH, prescribing a conservative or surgical strategy, and, most importantly, with the active implementation of regional preventive programs and rehabilitation and preventive intervention in relation to this pathology.

IV. Conclusions

1. There is a direct correlation between meteorological factors (AP, AT, RAH and SG) and the development "Ophthalmic continuum" from glaucomatous processes. Fluctuation of the main regional meteorological factors of the first order is the risk factors for the development and progression of GP.
2. In order to optimize and improve the therapeutic, prophylactic and rehabilitation programs of the GP, it seems appropriate to use the developed regional methods of clinical meteorological observation and meteorological prevention, based on the use of the forecast table and bioclimatograms.

References Références Referencias

1. Akhrorova Z.D. Primary glaucoma in Tajikistan (clinical-epidemiological and medical-social research)//wedge ophthalmolo 2002, 3 (2): 57-58.
2. Avdeev R.V., Alexandrov A.S., Basinsky A.S. et al. Clinical and epidemiological studies of risk factors for the development and progression of glaucoma // Russian Ophthalmological Journal - 2013 - 6 (3): 5-9.
3. Diagnostics and treatment of primary open-angle glaucoma // Federal Clinical Recommendations of the Interregional Society. org. "Association of ophthalmologists" Moscow - 2013. - p - 3.
4. Egorov E.A., Astanov Yu.S., Erichev V.P. National Guidelines for Glaucoma Practitioners. M: GEOTAR-Media, 2015: 451-455.
5. Kiselova O.A., Kasanyan S.M., Yakubova L.V. et al. Potophysiological features of development, clinical picture and manifestation of malignant glaucoma// Ophthalmologic Vedamesty-2019-T-12, - No. 03 - C 60-63.
6. Tarasov K.L. Complex preventive surgical postoperative malignant glaucoma // Abstract of the thesis. dis ... cand. Med.nauk - M- 2014- C 27-29.
7. Kuraedov A.V., Krinitsina E.A. et al. Changes in the structure of clinical and epidemiological indicators of primary out-of-angle glaucoma over 10 years in patients undergoing surgery// Ophthalmologicheskie vedomosti-2019 - T. 12-t No. 3 - C 206-207.
8. Kanyukov V.N., Voronima A.U., Borshchuk E.L. Medical and social characteristics of patients with primary open-angle glaucoma in the Orenburg region // Bulletin of the Orenburg State University-2015- № 9 (184). - From 77-80.
9. Sharaf Vakdi Muhammadi Epidemiological features of the clinical course of glaucoma depending on social, ecanomical, ethnic and geographical factors // National Journal of Glaucoma - 2014. - № 1 - C 69-74.
10. Tielsch j / M / The epidemiology of grimary open-angle glaucoma || O phthalmol Clin NA m 1991; 4: 649-654.
11. Mandal AK The pediatric glaucomas//hondon.-Netlan.-2006.-P.156.
12. Quigley HA Nutber of people with glancoma woridwide // Br J ophthalmol 1996; 80 (5): 389-392.
13. Finger RP, Koberlein-Neu J. et al. Trends in inpationt treatment in ophthalmology in Germany// Ophthalmolge 2013; 110 (3): 225-228.
14. Foster P. J., Baasanhu J. et al. Glaucoma in Mongolia//Arch Opht halmol 1196: 114: 1235-1239.
15. Gao D. W., Kubota T. et al. Astatistical comparison study of glaucoma in the Third Affiliated Hospital of china Medical College and Kyshu University Japanese // Acta Soc Ophthalmol Jap 1989; 93 (4): 458-462.

© 2020 Global Journals