
Features of the Course of Stroke in the Andijan Region of Uzbekistan

Gafurov M. E

Andijan Medical Institute

Majidova Y. N.

Tashkent Medical Pediatric Institute

Abstract: The article reviewed frequency of types of stroke among the population of Ferghana valley, at once analyzed structure of background diseases, which played the main role in the progression of stroke. An analysis of the case histories of patients hospitalized with a stroke diagnosis at the Andijan branch of the RSCEM from January 2018 to January 2019 was performed. Among 1243 patients, there were 607 men and 636 women, whose average age is 62.45 ± 2.9 years. Ischemic stroke was detected in 56.1% of cases, hemorrhagic in 12.4%, and transient cerebrovascular accident in 31.5%. The main underlying disease for the progression of stroke were arterial hypertension - in 70,4%, cerebral atherosclerosis - in 14,1 and coronary heart disease - in 7,4% of patients.

Keywords: ischemic stroke, hemorrhagic stroke, transient cerebrovascular accident, risk factors, arterial hypertension, cerebral atherosclerosis, coronary heart disease.

Introduction. Recent studies show that one of the reasons for the exacerbation of cardiovascular diseases is a change in the climatic parameters of the environment [3]. In patients with cerebrovascular disorders, pathological changes in vascular tone are observed with fluctuations in atmospheric pressure of 0.96 - 1.01 atm. [4]. It is well known that a significant proportion of the population is weather sensitive; in addition, in recent years there has been an increase in the severity of heliotropic reactions in healthy people [5, 6]. Differences in the incidence of acute cerebrovascular accident (ACC) at different times of the year and in regions with different climates are explained not only by the quality of medical care, but also by climatic conditions.

In the occurrence of stroke, the role of air temperature and atmospheric pressure drops, wind speed, and changes in normal seasonal temperature has been studied in detail [7]. An increase in geomagnetic activity is considered to be a generally recognized risk factor for stroke [1, 2]. Much less attention is paid to the actual meteorological factors in the absence of their sharp fluctuations.

In Europe, the primary incidence of stroke is 0.22, in the US - 0.16%. According to the Rochester study, only 29% of patients who have undergone stroke are fully rehabilitated, 71% have a persistent neurological deficit, which in 4% of cases requires constant care, 18% become disabled, but still retain the ability to serve themselves, and 10% retain aphasia. Thus, in total, disability is 70-80%. Moreover, the share of violations of the venous circulation of the brain accounts for from 4 to 30% of stroke [7]

The death rate from cerebral stroke varies greatly from country to country. Thus, this index in Eastern Europe is higher compared to the countries of Western Europe and North America

[5]. It should be noted that in recent years, mortality in developed countries has decreased significantly, and since the beginning of the seventies of the XX century, mortality has decreased every year by an average of 7%. By 1990, mortality in Western Europe averaged 0.1% of the population, while in Eastern Europe the average was 0.25% in the adult population [5]. The lethal outcome from GI in developed countries is 12% of the total, and is second only to diseases of the cardiovascular system and oncological diseases (in East Asia, the first place is 25%). If we take mortality only from cardiovascular diseases, the proportion of vascular pathologies of the brain reaches 20-30% in men, 30-40% in women [4].

Stroke was responsible for 5.7 million deaths worldwide in 2010, and CVA mortality is expected to rise to 6.7 million in 2020 and 7.8 million in 2030 unless effective measures for the effective treatment and prevention of cerebrovascular pathologies have been identified [1].

A direct correlation was found between the mortality index, as well as morbidity, with age - from 0.04 among 30-35 year olds to 7.55 at the age of 70 years and older. And it should be noted that mortality was higher with HI compared with cerebral infarction (0.042 % and 0.03%, respectively). In men, mortality from different types of stroke did not differ significantly, amounting to 0.36 for cerebral ischemia and 0.35 for hemorrhages, while among women mortality from IS prevailed in relation to disorders of the venous circulation of the brain (0.46 and 0.27, respectively).) [2].

As already mentioned, disorders of the venous circulation of the brain are an important economic problem, so the amount of economic costs in Russia is from 16.5 to 22 billion rubles, and in the USA - 7.5 - 11 billion dollars. In Finland, 6.1% of all spending on healthcare and medical and social assistance falls on this contingent [6]. If we take into account the relationship between the main causes of vascular diseases (atherosclerosis, arterial hypertension, heart pathology) and age, it becomes obvious that such a trend as an increase in the population of elderly and senile people is accompanied by an increase in the number of such patients and, accordingly, an increase in healthcare costs [3, 4].

Purpose of the study. Study of the influence of meteorological factors on the development of stroke in the Andijan region.

Material and methods. In total, 1,243 patients were hospitalized with a diagnosis of "Acute cerebrovascular accident" in the Republican Center for Emergency Medical Care of the Andijan branch. We analyzed the case histories of patients hospitalized in the Andijan branch of the Republican Emergency Medical Center from January 2018 to January 2019. The inclusion criteria for the study were age over 35 years and a verified diagnosis of stroke. The study recorded stroke risk factors that significantly affect a person's adaptation to different weather conditions or atmospheric pollution, and clinical features that were compared with weather factors. Data collection was carried out monthly. The weather data was provided by the Andijan Hydro meteorological Center. The average daily air temperature, precipitation, atmospheric pressure, wind speed and direction, and the presence of increased geomagnetic activity on the day of stroke were taken into account. There were 607 men and 636 women among the patients, with a mean age of 62.45 ± 2.9 years.

Results and discussion. Ischemic stroke (IS) was detected in 56.1% (697 people), hemorrhagic stroke (HS) in 12.4% (154 people), transient cerebrovascular accident (TCI) in 31.5% (392 people), patients (Fig. 1). The IS to HS ratio was 5.2:1.

Ischemic heart disease (IHD) was a background disease for the development of stroke in 7.4% of patients. Of these, 0.7% had acute myocardial infarction (MI), 2.9% had post infarction cardio sclerosis (PICS), 6.3% had angina pectoris, 7.0% had atrial fibrillation (AF),

0.5% had intracardiac conduction, and 6.8% have diabetes mellitus (DM), in the vast majority of cases type II. In 0.7% of patients, stroke occurred on the background of alcohol intake, in 0.6% on the background of arterial hypotension. Other diseases met in isolated cases.

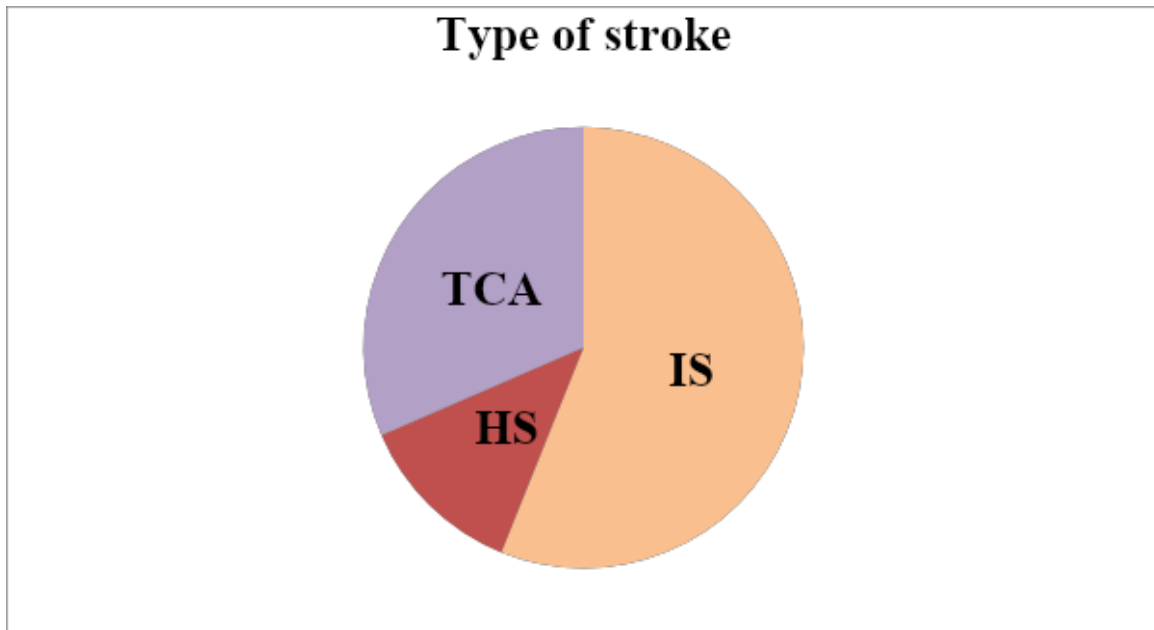


Figure 1. Structure of strokes by type (percentage).

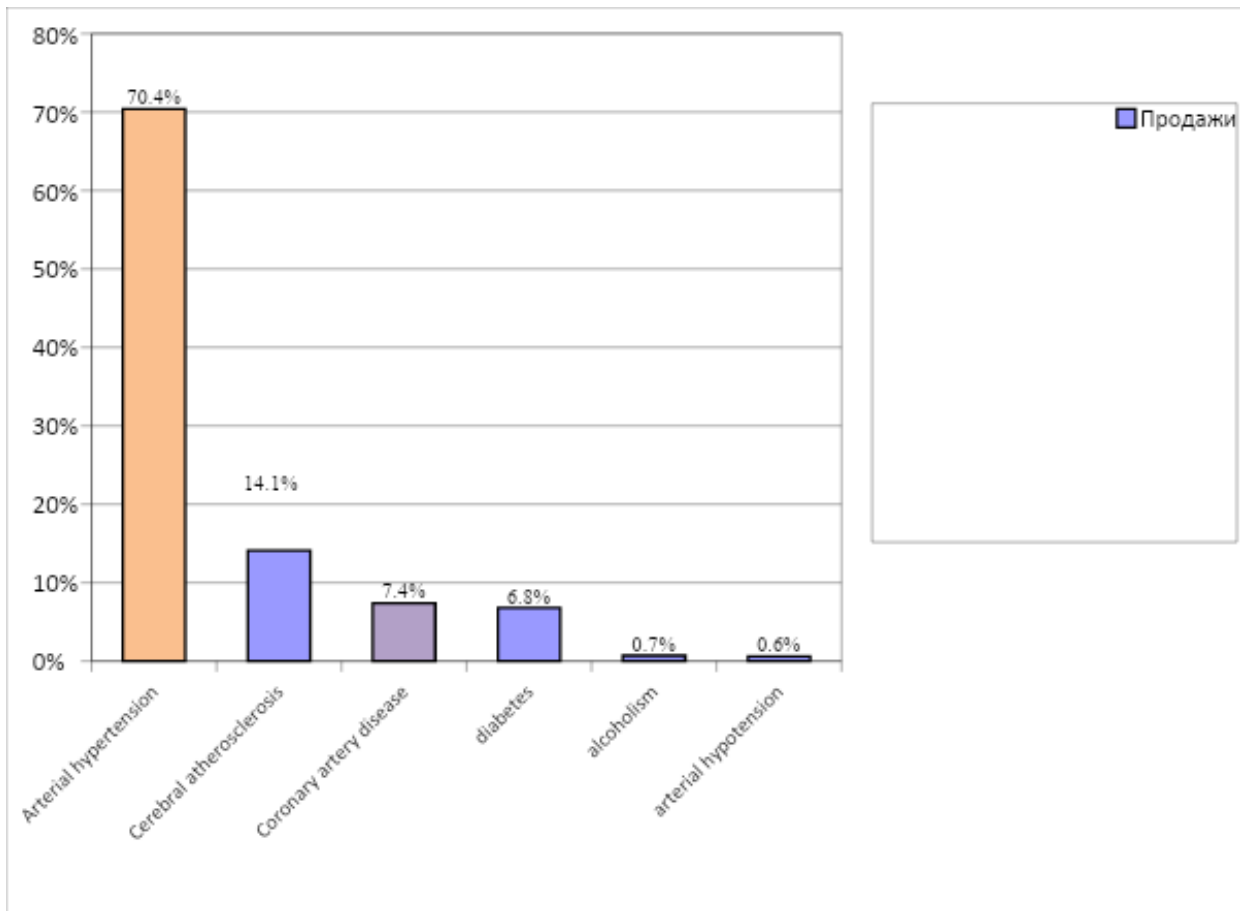


Figure 2. Structure of underlying diseases in patients with stroke (percentage)

We studied in detail the role of fluctuations in air temperature and atmospheric pressure, wind speed, and changes in normal seasonal temperature in the occurrence of stroke. It was during the days of changes in atmospheric pressure, increased wind speed that an increase in stroke was observed. At the same time, changes in air temperature did not affect the frequency of stroke. An increase in geomagnetic activity is considered to be a generally recognized risk factor for stroke [1, 2]. We have shown that during the days of geo- and heliomagnetic activity of the sun, an increase in acute disorders of cerebral circulation was observed. The results of studying the main background diseases in stroke patients (multivariate analysis) showed that 70.4% of patients had arterial hypertension (AH), 14.1% of patients had cerebral atherosclerosis (CA) (see Figure 1).

Conclusions:

1. The results of the studies showed that ischemic stroke was detected in 56.1%, hemorrhagic in 12.4%, transient cerebrovascular accident in 31.5% of patients. The AI to GI ratio was 5.2:1.
2. The main background disease for the development of stroke was AH - in 70.4% ($p > 0.005$).
3. The dependence was revealed precisely on the days of atmospheric pressure drops, the increase in wind speed, an increase in stroke was observed. At the same time, changes in air temperature did not affect the frequency of stroke.

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