Original Article
Cognition of risk factors of coronary heart disease among patients at the First People's Hospital of Kashi Prefecture

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Abstract: Coronary heart disease is a common cardiovascular disease in Xinjiang area. Kashi Prefecture is located in the southwest of Xinjiang Uygur Autonomous Region. The Uygur people in this area have developed unique eating and living habits. They rarely intermarry with other ethnic groups which makes them good subjects to study the differences of epidemic diseases among Uygur people and other nationalities. Objective: The goal of this study was to investigate the cognitive status of coronary heart disease (CHD) in Kashi Prefecture patients, and to identify the potential risk factors in Kashi Prefecture region. Methods: 89 patients with coronary heart disease, including 35 cases of Han nationality and 51 cases of Uygur nationality were enrolled in the First People's Hospital of Kashi Prefecture region. Targeted design of Kashi Prefecture minority cognitive status questionnaire was conducted and surveyed. Chi-square test was used to compare the recognition rate of coronary heart disease risk factors between the Han and Uygur groups. Results: The total score of disease cognition of Han nationality patients was higher than that of Uygur patients (P<0.05). Conclusion: The overall cognitive status of coronary heart disease patients was not good, especially in Uygur patients. Therefore, it is essential to carry out necessary health education in order to raise awareness of health protection and improve the quality of life for ethnic minorities in Xinjiang.

Keywords: Coronary heart disease, risk factors, investigation and analysis, ethnic differences

Introduction

Cardiovascular disease (CVD) is the leading killer of human health. The number of CVD patients in China is almost 290 million, and about 3 million people die from CVD every year. The number of patients with coronary heart disease is 11 million, and the mortality of coronary heart disease accounts for 10%-20% of cardiovascular disease [1].

In the world, although China has a lower incidence of coronary heart disease compared with the developed countries [2], there has been a marked trend of increase in recent years. The prevalence of atherosclerotic diseases is increasing, which seriously restricts and affects the public health [3].

At present, deaths from cardiovascular disease in China are the leading cause with 44.6% in rural areas and 42.51% in cities. Compared with the whole country, the incidence of the disease in the Yellow River basin is higher than that in the Yangtze River basin, especially in the high latitude area and the cold winter area. North China, such as northwest, northeast and other places, belongs to the area with high incidence of cardiovascular diseases, especially in Xinjiang, cardiovascular disease is more serious [4].

According to statistics, the morbidity and mortality of cardiovascular events in North China are higher than those in the South, and there are obvious differences in geographical distribution [5]. Pei et al. investigated the blood lip-

ids of patients with coronary heart disease in Uygur and Han nationality in Kashi Prefecture area. It was found that there was no significant difference in blood lipid levels between the patients of this region and other regions in China. This may be related to differences in the living conditions of different regions.

Due to the special geographical environment and the unique lifestyle of ethnic minorities, the incidence of cardiovascular disease is more serious in Xinjiang [6]. "For example, compared with the living habits of urban residents in the mainland, the daily intake of salt by ethnic minorities in Xinjiang is obviously higher than that in the mainland per capita. The main food intake was beef and mutton, and the smoking rate of adult male was higher. Due to high latitudes and low winter temperatures in Xinjiang, outdoor activities are greatly reduced". These bad behavior patterns and habits become the interaction or independent risk factors, leading to the emergence of systemic atherosclerotic disease, cardiovascular disease and other heart disease is an important cause.

Kashi Prefecture region is a multi-ethnic area where many ancient ethnic groups have multiplied and developed their unique economy and culture. Ethnicity is a social construct, a concept that intertwines biological, sociocultural, psychological, and behavioral components [7]. The Uygur people in this area have unique eating and living habits, and rarely intermarry with other ethnic groups, maintaining a relatively single genetic background, which provides a good condition for the study of the differences of epidemic diseases among different nationalities [8]. Through literature review and early investigation, we selected representative coronary heart disease patients in Kashi Prefecture district hospitals to interview, conduct questionnaire, follow up treatment, and return visits regularly to obtain real materials. Statistical analysis was carried out at the later stage.

Another major research background was that in August 2016, General Secretary Xi Jinping stated at the National Conference on Health and Health: As a result of industrialization, urbanization, population aging, disease spectrum, ecological environment, and lifestyle changes, China still faces a complex situation in which many diseases threaten each other and many health factors are intertwined. We are faced with both the health and health problems faced by developed countries and those faced by developing countries. If these problems cannot be effectively solved, it will seriously affect the health of the people, restrict economic development and affect social harmony and stability [9].

At present, the burden of cardiovascular diseases is continuously heavy, which severely threatens public health. The situation is worse in the Xinjiang Uygur Autonomous region. In the current study, the cognition of the risk factors of coronary heart disease was investigated in Kashi Prefecture area, which could provide statistics to improve the public health.

Materials and methods

From January 2017 to March 2017, 89 patients with coronary heart disease (CHD) newly admitted to the Department of Cardiology in the First People's Hospital of Kashi region were randomly selected. This period was also a high incidence season of coronary heart disease in Xinjiang region, including 35 cases of Han nationality, 51 cases of Uygur nationality, and 3 cases of other nationalities. The data were collected according to sex, age, and educational level. According to age, they were divided into the youth group, the middle age group and the elderly group (<54, 55-64, and >65). It was divided into illiterate, primary, secondary, and university groups according to their educational level. A one-to-one survey was conducted on 89 in-patients with coronary heart disease in this stage by anonymous method. Additionally, a Uygur version of the questionnaire was developed. For Uygur patients with coronary heart disease with low education level, there were special Uygur translation staff investigators carefully filling out, checking timely, supplementing, and modifying the missing or incomplete questionnaire. Statistical analysis was conducted using SPSS version 18.0. In this study, Chi-square test was used to compare the recognition rate of coronary heart disease risk factors between the Han and Uygur groups, and the significance level was set at $p<0.05$.

Results

Basic information

From January 2017 to March 2017, 89 patients with coronary heart disease (CHD) hospitalized

Table 1. Gender distribution/cases (%) of different ethnic groups in patients with coronary heart disease

Nationality	Male	Women	X^2 value	P value
Uygur nationality	35 (39.30%)	16 (17.90%)	0.748	0.467
Han nationality	27 (30.30%)	8 (8.90%)		
Other ethnic groups	3 (3.30%)	0 (0.00%)		
Total	65 (73.00%)	24 (27.00%)		

Table 2. Cognitive rate of risk factors for patients with coronary heart disease (%)

Risk factors	35 Patients with coronary heart disease in Han nationality		51 Patients with coronary heart disease in Uygur		P value
	Number	Cognitive rate	Number	Cognitive rate	
Family history	30	85.71%	30	58.82%	0.009
Smoking	24	82.86%	23	45.09%	0.047
Dyslipidemia	25	71.42%	21	41.17%	0.008
Obesity	24	68.57%	31	60.78%	0.501
Diabetes	22	62.85%	18	35.29%	0.016
Heavy drinking	21	60.00%	29	56.86%	0.826
Tension and stress	22	62.86%	46	90.19%	0.003
Hypertension	16	45.71%	21	41.17%	0.825
High fat diet	18	51.42%	17	33.33%	0.119

in the First People's Hospital of Kashi region were 65 males and 24 females, and the sex ratio was 2.70:1.

Ethnic groups were mainly Uygur and Han nationalities, which accounted for 57.30% and 39.30% respectively. The ratio of men to women in Uygur population was (2.18:1), which was higher than that in Han nationality (3.37:1), and the difference was not statistically significant (X^2=0.748, P=0.467) (**Table 1**).

Comparison of risk factors in patients with coronary heart disease in different nationalities

The main analysis of Han patients with coronary heart disease and Uygur coronary heart disease patients with various risk factors of coronary heart disease cognition (**Table 2**).

The results showed that the cognitive rate of various risk factors of coronary heart disease in the Han nationality was lower than that in Uygur group, but the cognitive rate of Han nationality patients with coronary heart disease was higher than that of Uygur patients with coronary heart disease, which was statistically significant (P<0.05). Uygur patients with coronary heart disease (CHD) have a poor understanding of the risk factors of coronary heart disease (CHD). The author thinks it is related to the following factors: At present, the majority of health education content in hospitals in the Xinjiang Uygur Autonomous region and in the media of television, radio, magazines, newspapers, networks, etc., are displayed in Chinese. Therefore, for the Uygur patients with coronary heart disease, due to language communication and understanding barriers, their disease related knowledge is less, and the communication with medical staff has greater obstacles.

At present, the Uygur people mainly eat beef, mutton, milk, and eggs with high cholesterol content in their diet. Therefore, we should strengthen publicity and education on risk factors and raise patients' awareness of controlling blood lipids, blood pressure, body weight, etc., lead patients in the national diet on the basis of the formation of a reasonable diet structure, further control exercise, diet, mentality, and other risk factors [7].

Differences in cognition rates of risk factors for coronary heart disease in patients of different genders

The cognition rate of male group was 38.70%, and the cognition rate of female group was 75.00%. The difference of cognition rate between two groups was statistically significant (P=0.004), that is, the cognition rate of the male group was lower than that of the female group (**Table 3**).

The results showed that gender had a significant effect on the cognitive rate of patients with coronary heart disease (CHD), and the female patients had a higher cognitive rate of disease. It may be related to the female patients' long-term career role in the family who pay more attention to their own body, while the

Table 3. Cognitive rate of risk factors for coronary heart disease in different sex patients (%)

Gender	Cognitive number	Unrecognized number	Total	Cognitive rate
Male	24	38	62	38.70%
Women	18	6	24	75.00%
Total	42	44	86	48.83%

Table 4. Cognition of risk factors for coronary heart disease in patients of different ages

Age	Cognitive number	Unrecognized number	Total	Cognitive rate
Youth	10	4	14	71.42%
Middle	14	12	26	53.84%
Old	16	30	46	34.78%
Total	40	46	86	45.51%

Table 5. Cognition rate of coronary heart disease risk factors in patients with different educational levels

Degree of education	Cognitive number	Unrecognized number	Total	Cognitive rate
Illiteracy	3	17	20	15.00%
Primary school	6	10	16	37.50%
Middle school	16	10	26	61.53%
University	18	6	24	75.00%
Total	43	43	86	50.00%

male patients pay less attention to the body because of their relatively rough personality.

In addition, estrogen plays an important role in the production and development of cardiovascular atherosclerosis. Estrogen promotes the development of female secondary sexual symptoms and reproductive system, maintains female physical signs and menstrual cycle, promotes embryo implantation, and leads to maternal changes during pregnancy. In addition to affecting the reproductive system, estrogen also plays an important role in protecting cardiovascular system, central nervous system and skeletal system.

Differences in cognitive rate of risk factors for coronary heart disease in different ages

The cognition rate of youth group, middle-aged group and elderly group were 71.42%, 53.84%, 34.78% (**Table 4**). There was no significant dif-

ference between young coronary heart disease group and middle-aged coronary heart disease group (P=0.329). There was a significant difference between the young coronary heart disease group and the elderly coronary heart disease group (P=0.029). There was a significant difference between the middle-aged coronary heart disease group and the elderly coronary heart disease group (P=0.140). Conclusion: there was no difference in the total cognitive rate between the young group and the middle age group. The total cognitive rate of the three groups, the young group and the old group, the middle age group and the old group are different, that is, the cognitive rate of the old group is lower than that of the young group, and that of the middle age group is lower than that of the patients with coronary heart disease.

Long-term clinical work has also found that elderly patients with coronary heart disease in the Han nationality have had an emotional tendency, especially in men, who were prone to recurrence of the disease, and the degree of attention paid to the disease would also increase [10]. Alternatively, the Uygur patients were more peaceful and both male and female patients were stable. Coronary heart disease has become one of the main causes of death in elderly patients. In order to diagnose and treat coronary heart disease as early as possible, the clinical characteristics of coronary heart disease in the elderly must be analyzed. Degenerative changes occurred in the heart of the elderly, such as fat infiltration, cardiac hypertrophy, amyloid atrophy, and intersecting degeneration, and increased myocardial acidity, which result in an unbalanced supply of blood to the heart and decreased response threshold of stress. Therefore, the elderly often have diabetes, valvular disease, hypertension, vascular disease, anemia and other complex conditions, that sometimes will cover up the clinical symptoms of coronary heart disease.

Cognitive rates of risk factors for coronary heart disease in patients with different education levels

The cognitive rates of the illiteracy group, the primary school group, the middle school group and the university group were 15.00%, 37.50%, 61.53%, and 75.00% (**Table 5**). Illiteracy was not statistically significant compared with pri-

mary school groups (P=0.146). The difference was statistically significant compared with the illiterate group middle school group (P=0.002). The difference was statistically significant compared with group of illiterate group (P<0.001). There was no statistically significant differences in primary school and middle school group (Group (P=0.204)). There were statistically significant differences between the primary school group and college group (P=0.025). There was no significant difference between middle school and college group (P=0.372). Finally, there was no difference in the total cognitive rate between the illiterate group and the primary school group, the middle school group and the university group, the total cognitive rate of the four groups, the illiterate group and the secondary school group, the illiterate group and the university group, the primary school group and the secondary school group. The cognitive rate of CHD risk factors in primary school group and university group was lower than that in the university and middle school groups.

The higher the level of education, the higher the recognition of the disease, which is especially reflected in Uygur patients (P<0.001). Because patients with higher education level have a higher understanding of risk factors, their health related concerns and their ability to acquire knowledge actively are better than those with lower educational level [11, 12]. Especially the Uygur patients with higher education level have higher cognitive level because of their time and intensity of receiving Chinese language and Chinese culture education than those with lower education level.

Method of reimbursement

The results of this study show that both Uygur and Han patients have a low cognitive rate of self-funded patients, and relatively high cognitive rate of government-funded patients. It is possible that patients with self-funded medical treatment have no time to pay attention to the disease related knowledge due to the excessive economic burden in the course of treatment, which leads to their low level of understanding of disease related knowledge. The occupational stability and educational level of patients with public medical treatment are relatively high. Studies by Zeng Li and others have

also shown that reimbursement of medical expenses has a certain impact on the knowledge, belief and practice of patients' disease [13].

Discussion

Based on our survey, it was found that inpatients with coronary heart disease do not have enough recognition of the risk factors. The overall cognitive status is not good, especially for Uygur patients. The cognition of the risk factors of the hospitalized patients with coronary heart disease is very unsatisfactory, especially in older males with a lower education level. The same problem was found in the investigations by Shi Chao et al. [14]. Attention should be paid to strengthening health education for patients with coronary heart disease in this area. Since the problem is serious in men patients, more health education should be given to men. For patients with coronary heart disease in Han nationality, health education should be strengthened in the population with low education and the celibacies. For patients with coronary heart disease of Uygur nationality, we should strengthen the health education and psychological nursing work, so as to improve the self-management, the quality of life and the survival rate [15]. We should also improve the cognitive rate of patients so as to improve the treatment compliance of patients and better prevent the recurrence of cardiovascular events. Effective intervention with scientific theories and methods should be given to enhance their self-care awareness. At the same time, we should strengthen national unity and constantly improve the integrity of the medicinal system in China.

With regard to the prevention of coronary heart disease, a change in life styles and diet control are highly recommended. For the patients, they need to keep a healthy diet and to quit smoking and alcohol based on a thorough understanding of their own diseases. At present, smoking and drinking are two proposed risk factors for the development of coronary heart disease. Therefore, maintenance of healthy life style and abundant cognition of this disease are important to control the occurrence of coronary heart disease. Xinjiang is located in motherland northwest and Uygur and Han accounts for over 65.00% of the population.

Two ethnic groups in culture, there are significant differences in religious beliefs and life styles. Therefore, understanding the differences in the cognition status and potential influencing factors between two populations are required before finding effective prevention to control the occurrence of coronary heart disease. In this study, most of the patients came from the southern Xinjiang area in which the economic, medical, and health conditions are relatively low. Furthermore, most of the patients have low education and poor awareness of coronary heart disease. It was often diagnosed in the late stage when they found that they suffered from coronary heart disease. In southern Xinjiang, due to the influence of eating habits and living habits, the occurrent of diabetes mellitus is relatively high. More importantly, the low education level and cultural quality directly affect the understanding of coronary heart disease. These risk factors of coronary heart disease have not been fully recognized in the area and possibly will become influential factors. Therefore, in order to control the morbidity and mortality of coronary heart disease in southern Xinjiang, the lifestyle should be improved with public education to remind people of the risk factors in their living habits and diets.

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Disclosure of conflict of interest

None.

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