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ORIGINAL ARTICLE

Knowledge and Understanding of Hypertension Among Tibetan People in Lhasa, Tibet

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Background The aim of this study was to investigate the knowledge and understanding about hypertension among residents in Lhasa, Tibet.

Methods A total of 1, 370 native Tibetan people aged ≥18 years old were enrolled in this survey. Individuals were selected using stratified proportional sampling and Lhasa was divided into Urban, Suburban, Agricultural and Pastoral areas. Data pertaining to blood pressure, socio-demographic details, knowledge and perceptions about hypertension were obtained.

Results The prevalence of hypertension was highest among Urban participants (56.1%) and lowest among Pastoral participants (34.2%). The awareness of hypertension (43.1%) was lowest among Agricultural participants. Less than one third of the respondents knew the normal range of blood pressure. A considerable proportion (49.2%) had no idea of risk factors and consequences of hypertension. With regard to prevention and control, about 30% of the respondents did not know the lifestyle changes for hypertension prevention. Regarding treatment, 30% of participants did not provide an answer. Most of the respondents acquired knowledge of hypertension from healthcare providers. Participants from the Agricultural areas had the lowest knowledge of hypertension. Approximately 75.5% of hypertensive patients ceased antihypertensive medications on their own after improvement of blood pressure.

Conclusions The understanding of hypertension was poor among the native Tibetan people in Lhasa. There is a need to improve education and primary health care services to this large hypertensive population.

Keywords Hypertension • Knowledge • Prevalence • Agricultural areas • Tibet

Introduction

Hypertension is an important contributor to cardiovascular diseases and cerebral-vascular diseases in western countries and in Asia [1–4]. A recent meta-analysis has shown that the overall prevalence of hypertension in China has increased to 21.5% [5]. However, the rates of treatment and control of hypertension are still low in most parts of the world [5–7]. Further, the knowledge and understanding of hypertension was still poor in many parts of the world. In China, there is a large variation in the prevalence of hypertension among different geographic areas [8].

Lhasa is the capital of Tibet. The native residents are Tibetan people who live at a high altitude of average 3,650

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metres above the sea level. Though some studies showed that blood pressure decreased with increase in altitude among permanent inhabitants of high altitude [9,10], our study has shown that hypertension was highly prevalent among native Tibetan people in Lhasa [11]. In our study on 1,370 native Tibetan people aged ≥18 years old, the prevalence of hypertension was 51.2% [11]. The hypertension prevalence increased with age (77.8% in 60-74 years and 82.5% in ≥ 75years group) [11]. The self-awareness, treatment and control rate of hypertension was 63.5%, 24.3% and 7.7%, respectively [11].

Poor knowledge of hypertension may be responsible for the low rates of awareness and control of hypertension. Healthy lifestyle changes, such as dietary modification, exercise and stress reduction, are important for control of hypertension. However, it is not clear whether the native Tibetan people are equipped with this knowledge.

Methods

Study Participants

This investigation is a cross-sectional survey of self-reported understanding about hypertension, which was part of our survey of hypertension prevalence in Lhasa [11]. Data were collected from April to June, 2010. The selection of the participants was based on a stratified proportional sampling method. The region of Lhasa was divided into Urban, Suburban, Agricultural and Pastoral areas in terms of their financial and agro-stockbreeding status: Urban: central districts in the Lhasa city; Suburban: counties in 20-50kms distance to Lhasa city; Agricultural area: counties mainly on agricultural land about 50-150kms from Lhasa; Pastoral area: counties mainly on stockbreeding land 50-180kms from central Lhasa. The study participants were permanent residents with a record in the household registration of native Tibetan population and were aged 18 years or older. The Ethics Committee of Lhasa Centre for Disease Control approved the study protocol. Informed written consent was obtained from all the participants prior to data collection.

Survey Methods

Standardised mercury sphygmomanometers were used for the measurement of blood pressure in the present study. Investigators were trained in the measurement of blood pressure and in administering the survey questionnaire before the study. Blood pressure was measured according to 1999 World Health Organization/ International Society of Hypertension guidelines on hypertension [12]. Hypertension was defined according to the 2007 European Society of Cardiology (ESC) guidelines for the management of arterial hypertension [13]. Self-awareness of hypertension was defined as self-report of any prior diagnosis of hypertension by a healthcare professional. Treatment of hypertension was defined as a prescription medication used for management of hypertension during the previous two weeks. Control of hypertension was defined as systolic blood pressure <140 mm Hg and diastolic blood pressure <90 mm Hg after treatment.

All identified participants were seen at a clinic. The socio-demographic details were collected. Height and weight were also measured. All the participants were queried on knowledge and understanding using a pre-tested interview questionnaire. The questionnaire comprised three categories. The first was about knowledge on the optimal level of blood pressure, on risk factors of hypertension and on consequences of uncontrolled hypertension. The second was in relation to measures to prevent and treat hypertension. Participants were asked to select two or more of the anti-hypertension methods. They were also asked whether they had acquired hypertension-related education from healthcare providers. The third part of the questionnaire was aimed at hypertensive patients. A couple of questions were asked to evaluate medication adherence and compliance, as well as perceptions on hypertension control. All responses were validated by the first author randomly by interviewing the participants who had completed the survey. The interview protocol consisted of both closed-ended and open-ended questions. The responses to open-ended questions were narrative and were categorised during analysis.

Statistical Analysis

Participants' characteristics were summarised using means and standard differences (SDs) or counts and percentages as appropriate. Data about the prevalence, self-awareness of hypertension, socio-demographic details, and understanding of hypertension were obtained for the whole sample. Comparison of categorical data between groups split by areas of residence was performed with Chi-square test. P <0.05 was considered statistically significant. SPSS 19.0 software was used for analysis (SPSS, Inc, Chicago).

Results

Basic Characteristics of the Participants

A total of 1,370 adults aged ≥18 years agreed to participate. Table 1 shows the basic characteristics of these participants by the area of residence. A total of 54 items were missing though all participants responded to the questions. Compared to other groups, most of the Pastoral participants were in a younger age group and Agricultural Area had more old people (≥75 years) (p <0.001). Women were significantly more than men in Pastoral Area and Suburban Area (p <0.001). A total of 46.4% of Agricultural participants did not have any formal education. In addition, they smoked and drank more than participants from other areas (both p <0.001). The majority of Urban participants received formal education, some of whom completed higher education. Their smoking rate was the lowest in these four groups. However, a higher proportion of Urban participants were overweight or obese. As to income level, the ratio of high