Prevalence of hypertension and its relationship with some demographic characteristics in blood donors referred to blood transfusion center in Lorestan, west of Iran

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A B S T R A C T

According to World Health Organization, there are 17 main risk factors for mortality that CVD is seventh reasons of mortality. According to high prevalence of hypertension in Iran and the role of hypertension in CVD the aim of this study was determination of the prevalence of hypertension and its relationship with some demographic characteristics in blood donors. Sample size of study population was 4005 subjects. All data were analyzed by SPSS software. Differences between studies in various countries may be due to different sample size, age ranges, sex and cultural differences. we did not found any association between SBP and sex that these findings were similar to Yosefinezhad study [18]. In the present study there was a significant relationship between SBP, DBP and age than was similar to Sayemiri study.

INTRODUCTION

Hypertension is one of the main risk factors of cardiovascular disease [1-3]. One of the main reasons of admission of several patients is hypertension in emergency departments of hospitals [1,4]. Cardiovascular disease (CVD) mortality causes the highest rates of death in industrialized countries and its rate is increasing in developing countries [5]. According to World Health Organization, there are 17 main risk factors for mortality that CVD is seventh reasons of mortality [6]. Screening and control of hypertensive patients are primary objective for prevention of CVD [7]. Systolic blood pressure (SBP) higher than 140 mmHg and diastolic blood pressure (DBP) higher than 90 mmHg is considered as hypertension in adult. According to epidemiological study in Eastern Mediterranean countries and Middle East, prevalence of hypertension was estimated 10-17% [8]. Studies showed high prevalence of hypertension in Iran. According to health and disease study that was done in 24 provinces of Iran during 1990-1993, 14% of participants that were 12-69 years of old had DBP equal or higher than 90 mmHg [9]. According to cross-sectional study in Lorestan, mean of SBP was 133.25 mmHg and mean of DBP was 80.67 in 1377. Findings showed 32.20% of participant had diastolic hypertension and 30.7% had diastolic hypertension [10]. Abnormal blood pressure lead to abstain from blood donation [11,12]. According to the national blood transfusion, blood donors must have 180 ≥SBP≥90 and 100≥DBP≥50 mmHg for prevention of complications that may occur in patients with low or high blood pressure [13]. Due to various complications of high blood pressure, asymptomatic in most cases and hypertension as one reason of inhibition from donating blood, recognition of hypertensive blood donors are important. Screening and recognition of hypertensive patients in initial stage lead to complication and reduce health care costs. In addition to, screening and control of hypertensive patients is considered as one of the primary goals of preventing CVD [14]. According to high prevalence of hypertension in Iran and the role of hypertension in CVD, the aim of this study was determination of the prevalence of hypertension and its relationship with some demographic characteristics in blood donors referred to blood transfusion center in Lorestan.

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Methodology:

This descriptive-analytic study was a routine data base study. The population included all patients that referred to blood transfusion center in Lorestan city for blood donation during 2002. 4005 participants included in our study. Demographic information as age, gender, marital status, education levels and occupation were collected. SBP and DBP were measured by physician with standard protocol after 15 min resting. All data were analyzed by SPSS software. Chi square and ANOVA test were used for statistical analysis. p<0.05 was considered as significantly.

Finding:

Sample size of study population was 4005 subjects. There were 3516 (87.8%) men and 482 (12.1%) female. In terms of education level there were 147 (3.7%) illiterate, 927 (23.2%) below diploma, 1539 (38.5%) diploma, 601 (15%) upper diploma, 709 (17.7%) bachelor, 50 (1.3%) master of science and 24 (0.6%) doctor of Philosophy (PhD). There were 1443 (36.1%) subjects with self-employed, 956 (23.9%) Employee, 538 (13.5%) students, 70 (1.8%) soldiers, 215 (5.4%) military subjects, 376 (9.4%) unemployed, 70 (1.8%) workers and 329 (8.2%) housekeeper. 1620 (40.5%) subjects were single and 2377 (59.9%) were married .Mean age was 34.21±10.22. Youngest blood donor was 18 years of old and oldest blood donor was 79 years of old. Mean age was 33.88±10.09 in men and 36.66±10.81 in female. Mean weight was 79.83±12.12 kg. Mean weight was 80.59±11.96 in men and 74.63±11.99 in female. Mean SBP was 12.01±1.33 mmHg and mean DBP was 7.8±0.56mmHg in total participants. Mean SBP and DBP were 11.83±1.44 mmHg and 7.75±0.61mmHg respectively, in female and mean SBP and DBP were 12.03±1.32 mmHg and 7.8±0.55 mmHg respectively, in men. These results show SBP and DBP in men are higher than female. Most participants (69.3%) had SBP less than 130 mmHg and 93.8% participants had normal DBP and less than 85 mmHg. 907 subjects (31%) had SBP higher than normal including mild blood pressure and moderate blood pressure. 183 subjects (6.22%) had DBP higher than normal including mild blood pressure and moderate blood pressure. There was significant association between SBP, DBP and age (p<0.001). In addition to, there was significant association between SBP and sex (p=0.02), However, there was not any association between DBP and sex. DBP in men was higher than female.

Discussion

Prevalence of hypertension was 31% in the present study. Mean SBP was 12.01±1.33 mmHg and mean DBP was 7.8±0.56 mmHg. These findings were similar to Delpishe et al study on 342 employees in Lorestan. According to their findings, 32.20% had systolic hypertension and 30.7% had diastolic hypertension. Mean SBP was 133.25 mmHg and mean DBP was 80.67 mmHg [10]. A study in United State showed prevalence of hypertension was 33.2% in 25-74 year old participants in Chicago [15]. Demirchi and Mehrabani et al reported 35.4% of participants were hypertensive patients. Findings of some studies are apposite of our study and they showed lower prevalence of hypertension. Sadeghi et al in their cross-sectional study found 15.6% men had hypertension. This study was applied on subjects over 19 years in Isfahan city [17].

Yosefinezhad et al showed prevalence of mild hypertension was 7.5% in 1854 blood donors in Sanandaj city [18]. Farshidi et al studied 2087 participants over 18 years and reported mean blood pressure was 84 mmHg in men and 80 mmHg in female [19]. In Amirkhizi et al study, 14.3% female had hypertension [20]. An epidemiologic study by Navai et al on 2705 participants over 30 years in Tehran villages showed prevalence of systolic hypertension was 11.1% and diastolic hypertension was 22.2% [21]. Assessment the prevalence of hypertension and its relationship with anthropometric indices showed prevalence of SBP and DBP were 10.2% and 9.2% respectively in adolescent girls in Rafsanjan city [22]. Prevalence of hypertension was 19.4% in Urmia city that its prevalence in female was more than men [23]. According to studies, prevalence of hypertension was 14% in 1100 employee in England and participants over 45 years in West Africa [24,25]. A study was conducted in Italy on 1976 blood donors 65-18 years of old and showed prevalence of hypertension was 22.3% in men and 15.7% in female [26]. Differences between studies in various countries may be due to different sample size, age ranges, sex and cultural differences. Some studies showed aging, weight gain, smoking and increase anthropometric indices led to increase blood pressure. However, in the present study only age and sex differences were investigated.

In the present study, there was significant association between SBP and sex in men was higher than women. These findings are similar to some studies [15-17] and apposite with another studies [18,23]. However, we did not found any association between SBP and sex that these findings were similar to Yosefinezhad study [18]. In the present study there was a significant relationship between SBP, DBP and age than was similar to Sayemiri study. Yosefinezhad et al., [18] showed significant association between age and high SBP and hypertension was more in subjects over 45 years.
Conclusion:

Prevalence of hypertension was 31% in the present study that was higher than other studies in Iran. There was a significant association between SBP, DBP and age (p<0.001). There was a significant association between SBP and sex (p=0.02). However, there was not any significant association between DBP and sex. But DBP in men was higher than women.

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REFERENCES


