Introduction

1)Hypertension is now a major public health problem that affects approximately one billion individuals worldwide.주제문장으로 고혈압의 임상적 중요성을 강조. It is widely acknowledged that blood pressure and the prevalence of hypertension increases with age in adults living in western societies. 고혈압이 연령과 함께 증가한다는 사실을 기술하며 전개. Therefore, as the population ages, the prevalence of hypertension will increase even more. 주제질병을 더 전개. Hypertension is a major risk factor for coronary heart disease, heart failure, cerebrovascular disease and chronic renal failure. 고혈압과 다른 질병과의 관련성을 언급. The high incidences of these diseases and the high prevalence of hypertension in most developed and developing countries make it the single most important cause of cardiovascular morbidity and mortality. 이질병의 고율 발생이 의학적으로 중요한 것임을 강조하면서 첫문단을 정리.

The prevalence of hypertension in various regions of the world has benn widely reported. 고혈압의 발생빈도에 대한 도입 주제문장. 세계적으로 발생빈도 연구가 있음을 기술. However, much less is known about the incidence of newly developed hypertension than about its prevalence. 신규로 발생하는 빈도에 대한 연구가 별로 없다는 기술로 연구주제를 도입. Asian comprise the largest ethnic group in the world and the fastes growing minority ethnic group within the Unites States. 아시아인의 비중이 높아진다는 전제를 기술. The prevalence of hypertension in most Asian groups is similar to that of non-Asians. 아시아인의 고혈압 발생빈도에 대해 기술. Although numerous cross-sectional studies and cohort studies have provided important information on hypertension prevalence and incidence in various ethnic groups, only a few studies regarding the prevalence of hypertension have been conducted in Korea. 국내 고혈압 발생빈도에 관한 연구를 언급함. The previous studies were conducted more than 8 yr ago. Furthermore, previous studies were crosssectional studies, and the incidence of hypertension was not addressed. Accordingly, limited data is available about the incidences of hypertension in Kopea. 8년전에 단면적인 연구가 있었으나 고혈압의 발생빈도에 대한 연구가 없었음을 기술. Therefore, the purpose of this study was to estimate the incidence of hypertension over 5 yr in non-hypertensive Koreans from the Hypertension-Diabetes Daegu Initiative (HYDDI) study. 이연구의 목적을 결론문장으로 기술하면서 서론의 마지막 문장을 기술.

2) Praziquantel has been used comprehensively in both clinics and field as a broad-spectrum anthelmintic for the treatment of trematode or cestode infections. Though it is regarded as safe generally, the comprehensive use of praziquantel inevitably induces several common adverse reactions, such as, abdominal pain, diarrhea, dizziness, sleepiness, and headache. Most of these adverse reactions are transient and rapidly subside without specific treatment. In addition to these common adverse reactions an anaphylactic reaction may occur, but it is very rare and neglected usually. A search of the literature revealed that two cases of anaphylactic shock have been attributed to praziquantel.

Materials and methods

Study design

The HYDDI study is a community-based health survey conducted from august to November 2003 in a rural area. 연구의 성격과 대상 지역을 설명. The target population of the present study was the residents aged 20yr and older living in rural area convered by community health primary health care posts of the OO gun. 농촌의 보건진료소를 이용하는 20세 이상 주민이 대상임을 설명. According to the resident registration, 21,011 residents were eligible for screening, two to four villages from the area covered by each primary health care post were randomly selected, totaling 26 villages (n=2,680). Of the 2,680 candidate subjects, 1,806 subjects finally agreed to participate in this health survey including a complete medical history, anthropometric measurements, and the collection of fasting blood samples. 대상자 선정과 대산자의 자료수집을 설명. All participants visited community health centers to take the examination. During the 5-yr follow-up, 518 subjects died or moved out from their previous residents and 1,287 (71.3%) individuals attended the 5-yr follow-up examination. At baseline examination, 1,034 subjects (57%) did not have hypertension. Of these non-hypertensive subjects, 730 (70.6%) had the 5-yr follow-up examination and finally included in this analysis. 5년간 추적조사된 인원에 대해 기술. 농촌에서 5년간 시행한 코호트에 대해 설명하고 참여 인원과 추적검사된 인원수를 상세하게 설명하면서 연구대상을 소개.

Questionnaires survey, measurement of anthropometric, and laboratory parameters. The structured questionnaires convered the personal demographic data and medical history, and family history of chronic diseases. The frequency and duration of alcohol consumption and smoking habits, and the frequency of physical exercise were recorded. Alcohol consumption was classified as either a drinker, ex-drinker, or a non-drinker from the self-administered questionnaire. Smoking was classified as either current, ex-(not for at least 1 yr), or a non-smoker. Physical exercise was defined with the frequency of physical activity: none, 1-2 times per week, or 3times or more per week. 연구대상에게 얻은 설문서를 소개하는 문단으로 시작. Anthropometric measurements including height, weight, waist circumferences, and hip circumferences were also measured by practitioners. Body weight was measured in light clothing, and height was measured in a standing position. Waist circumference was measured at the midpoint between the lower rib margin and the iliac crest. Body mass index (BMI) was calculated as weight divided by height squared (kg/m2). 연구자료 확보에서 신체계측을 설명.

Blood sample was drawn in the state of at least 8 hr over-night fasting. The fasting plasma glucose and serum concentration of total cholesterol, triglyceride, and high-density lipoprotein cholesterol were measured by enzymatic methods using the Dimension AR system (Dade Behring, Inc., Deerfield, IL, USA) 혈액검사로 얻은 자료 목록을 기술.

Definition of hypertension

Systolic and diastolic blood pressures were measured in the sitting position using a sphygmomanometer after 5-min rest. Two blood pressure readings were averages, and it was used for analyses. According to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC VII) criteria, hypertension was defined as systolic blood pressure > 140 mmHg and/or diastolic blood pressure > 90 mmHg, ore current use of antihypertensive medication: prehypertension was if the systolic blood pressure was 120 to 139 mmHg and/or diastolic blood pressure was 80 to 89 mmHg; and normal was if the systolic blood pressure was <120 mmHg and diastolic blood pressure was < 80 mmHg. Incident cases of hypertension were defined as either a new diagnosis or a self-report of a newly initiated antihypertensive treatment.

Statistical anaylsis

Data are expressed as the mean + SD for continuous variables and as percentages for categorical variables. Comparisons between the baseling variables were made with the Student’s t-test for continuous variables and the Pearson’s chi-square test for categorical variables. The incidence of hypertension (per 100 persons) was calculated as the number of subjects who developed hypertension during the follow-up divided by the total number of those at risk at the baseline. The age-adjusted incidence rates of hypertension for each of the blood pressure groups were determined via the direct adjustment standardization method. National Census data in 2005 from the Korea National Statistical Office was used to determine the standards for the Korean population. Logistic regression analysis was used to calculate the relative risk for prehypertension associated with the development of hypertension. For all analyses, a two-sided P<0.05 was considered statistically significant. Statistical analysis was performed using SAS software, version 9.1. 결과를 분석하는데 사용한 통계검증을 소개.

Ethics statement

This study protocol was approved by the institutional review board of the KKK University Hospital (No. 74005-1541). Written informed consent was obtained from all participants. 기관연구윤리 심의와 승인에 대해 기술하고 피험자 참여동의서 제출을 명시함.

Results

According to JNC VII criteria, the crude prevalence of hypertension in subjects (n= 1,804, excluding two with missing data) who provided blood pressure data was 42.7% (43.9% in men and 41.9% in women) in 2003 (Table 1). The age-adjusted prevalence of hypertension was 28.0% (29.5% in men and 24.8% in women) in 2003. Baseline characteristics of 730 non-hypertensive subjects (265 male; mean age = 56.6 + 11.1 yr-old) are shown in Table 2. The prehypertension was present in 35.7% (n=359). Prehypertensive individuals were older, more likely to be male, and had higher systolic and diastolic blood pressure, higher body mass index and waist to hip ratio, and higher total cholesterol and triglyceride levels. 표 1의 대상자 전체 고혈압 빈도를 연도별로 제시한 것을 설명. 표2에서 제시하는 대상자의 기본 검사 소견과 초기 고혈압 빈도를 설명.

Table 3 shows the changes in blood pressure category of subjects during the follow-up according to their baseline blood pressure category. During the 5-yr follow-up, 195 (26.7%) non-hypertensive subjects developed hypertension, including 45 (16.6%) of subjects with normal blood pressure and 150 (32.7%) of subjects with prehypertension. There was no significant difference in the incidence rate of hypertension by gender (23.0% in men and 28.8% in women, (=0.089). 표3에서 5년간 추적조사 기간 중에 일어난 정상인과 초기 고혈압인에서의 빈도를 비교설명.

Progression to hypertension was determined on the basis of an increase in systolic blood pressure alone in 90 subjects (46.2%); diastolic blood pressure alone in 33 (16.9%); both systolic and diastolic blood pressure in 35 (17.95); and on the basis of start of antihypertensive agents in 37 (19.05) 고혈압으로 진행한 환자에서 수축기와 이완기를 나누어 설명.

The crude 5-yr incidence of hypertension was 26.7% (95% confidence interval [CI], (23.5-30.1) in overall subjects, 23.0% (95% CI, 18.1-28.6) in men, and 28.8% (95% CI, 24.7-33.2) in women (Table 4). The age-adjusted 5-yr incidence of hypertension was 22.9% (95% CI, 19.9-29.0) in overall subjects, 22.2% (95% CI, 19.9-29.0) in men. The incidence rates of hypertension significantly increased with age. The crude 5-yr incidence rates of hypertension in normotensive subjects were 16.6%. 수축기 고혈압이 연령과 비례해 발생빈도가 유의하게 증가하고 이완기 고혈압은 연령에 따라 유의하게 감소한다는 내용을 기술. 그림1,2를 제시.

In multivariate logistic regression analysis, prehypertension (Odds ratio [OR] 2.25; 95% CI, 1.48-3.42, P<0.001) and older age (OR 2.26; 95% CI, 1.21-4.20, P=0.010) were independent predictors for incident hypertension after adjustment for sex, BMI, waist circumference, drinking, current smoking, exercise, high triglyceride levels, low high density lipoprotein cholesterol levels, and the presence of diabetes mellitus (Table 5). 다변수 회귀분석을 통해 경계고혈압과 나이가 독립적인 예측인자임을 설명. 표 5개와 그림 2개를 통해 자료를 제시하면서 이를 본문에서 설명. 전체 대상자에서의 빈도와 기본검사 소견, 코호트 관찰기간 중의 신규환자 발생과 이에 관련된 예측인자를 수축기와 이완기 고혈압을 구분해 분석 설명함. 여러 변수를 보정해 분석하고 경계 고혈압과 연령이 고혈압 발생의 주요 독립 예측인자임을 설명함.

Discussion

연구결과의 의의를 설명하면서 이야기를 시작, 결과 중 중요한 것을 중심으로 하나씩 설명하고 다른 연구결과와 비교, 이 연구의 제한점을 간단하게 설명, 결과에 근거하는 결론을 현재형으로 기술.

In this community-based health survey in a rural area of Korea, the age-adjusted prevalence of hypertension was 28.0% (29.5% in men and 24.8% in women) in 2003. 주제문단의 주제문장으로 결과의 핵심을 제시. The crude 5-yr incidence of hypertension was 26.7% (23.0% in men, 28.8% in women) and the incidence of hypertension increased with age. Prehypertensive individuals were twice as likely to develop hypertension as the normotensive individuals. 주제문단의 정리문장으로 경계선상의 초기 고혈압을 가진 사람에게서 고혈압 발생빈도가 높았다는 사실을 기술함. 고찰의 주제문단으로 연구결과에서 전체적인 고혈압 발생빈도를 제시하고 경계고혈압인 대상자에서 발생빈도가 두배로 증가한 사실을 기술.

In our study, the age-adjusted prevalence of hypertension is higher than 19.8% of year 1990, but similar to 28.6% of the Ansan study (year 1999-2000). In previous reports, the prevalence of hypertension tends to be higher in Western countries than in Asian countries although different study populations and different methodologies among surveys regarding the number of blood pressure measurements and the time interval between measurements may have contributed to observed differences. Over the past decade, the prevalence of hypertension has remained stable or decreased in developed countries, whereas it has shown a tendency to increase in developing countries. A significant downward trend in the prevalence of hypertension was observed in the US during 1960-1991 and Finland during 1982-1997. However, the third Chinese national hypertension survey reported that the prevalence of hypertension increased by approximately 25% during 1980-1991. Furthermore, a recent study reported that there were no sifnificant cross-sectional differences between developed and developing countries in hypertension indices. High economic development, changes in lifestyle and diet, and an increase in the prevalence of obesity, in part, may explain the rapid increase in the prevalence of hypertension in Korea. Another important factor is an increase in life expentancy in Korea over the past decade. According to the US international Population Reports, only 18 yr (2000-2018) will be required for percent of Korean population aged 65 and over no rise from seven percent (aging society) to fourteen percent (aged society). 처음 제시한 주제문단을 전개하는 문단으로 이번 연구결과와 기존 국내외 고혈압 발생빈도에 대한 전체적인 연구결과를 비교. 국내에서 점차 고혈압 빈도가 증가하고 있는 현상을 설명하고 증가 이유를 추정함. 국내 평균수명의 연장현상을 설명.

Several previous epidemiological studies have evaluated the incidence rates of hypertension in the community. 주제문단으로 지역단위 고혈압 빈도를 도입. However, information on the short-term rates of development of hypertension in non-hypertensive blood pressure categories is limited. The Framingham heart study has provided information on short-term incidence of hypertension according to JNC VI and the World Health Organization International Study of Hypertension blood pressure categories. 주제에서 도입한 지역단위 고혈압 연구의 대표적 예인 프레밍햄 심장연구를 이어서 제시하며 전개하고 그에대한 설명과 비교를 이후 계속 기술. Although the Framingham heart study has been regarded as a representative US cohort study, there are some differences in the study period, the time frame for follow-up, and the age distribution of the sample compared with the present study. The incidence of hypertension in the Framingham cohort increased with age and that the extent of this age-related increase depends on the initial value of blood pressure. Over a follow-up of 4 yr, 19,07 (19%) of 9,845 participants developed hypertension including 6% of subjects with optimal blood pressure, 20% of those with normal blood pressure, and 43% of subjects with high normal blood pressure. Hypertension incidence among participants in each of the three non-hypertensive categories increased with age. However, few studies have been conducted in Asia and cross-national comparisons of incidence rates of hypertension are still limited due to the differences in methodology. In a recent investigation, the crude 2-yr incidence of hypertension according to JNC VI criteria was 12.2% (13.0% in men and 11.6% in women) in middle-aged Korean adults. 아시아와 한국의 자료에 대해 설명을 시작. Unfortunately, however, comparison of incidence rate of hypertension among these studies is difficulty, since the age-adjusted incidence rate was not reported in the previous studies. In the present study, the crude 5-yr incidence of hypertension was 26.7% (23.0% in men and 28.8% in women). When the annual probability of a progression to hypertension was calculated based on the assumption of the costant risks, the rate in the present study was 5.3%, which was higher than that in the Framingham heart study (4.8%) but was lower than that in middle-aged Korean adults (6.3%). Ratio of mortality from coronary heart disease in men aged 35-44 between Korea and the US has diminished substantially from 9 in 1985 to 2.4 in 1992. The rapid increase in coronary heart disease mortality in Korea could be attributed, in part, to by the high incidence rates of hypertension 정리문장에서 국내 심혈관 질환 사망률 증가가 고혈압의 높은 빈도에 의한 것임을 강조. 이 연구와 동일한 방법론인 농촌 지역 고혈압에 대한 코호트 연구결과를 도입. 미국의 프레밍햄 심장연구 예를 들어서 설명하고 연구결과와 비교. 연도별 증가소견과 국내의 현황을 국내 심혈관질환의 발생과 연계해 설명함. 즉 미국에서 발생빈도가 연령에 따라 증가하였고 4년간 코호트 연구결과 적정혈압군에서 6%, 정상혈압군에서 20%, 경계 초기 고혈압군에서 43%가 고혈압으로 확인되어 코호트 초기 혈압이 중요한 인자였다고 기술함. 이 연구결과를 토대로 대상 코호트에서 고혈압의 위험도 증가가 매년 5.3%임을 설명. 국내에서 35-44세 남자의 심장질환 사망률이 증가한 이유로 고혈압의 증가를 언급함. 즉, 전체적으로 전개문단이며 고혈압과 심혈관 질환의 발생을 연결.

In the present study, prehypertension in addition to old age (age > 65) were independent predictors for incident hypertension, as has been reported previously. 주제문장으로 경계 고혈압을 도입. One of the potential reasons for high incidence of hypertension in prehypertensive individuals is that risk factors for hypertension (such as baseline age, higher body mass index, and higher total cholesterol levels) were common in prehypertensive individuals. These findings support the recommendation of the JNC VII for prehypertensive individuals, lifestyle modification and multiple risk factor reduction, for the Asian prehypertensive individuals as well. 정리문장으로 아시아인의 경계 고혈압에 대한 대책을 제시. 전개문단의 절정으로 경계 고혈압을 주로 다룸. 이 연구에서 경꼐 고혈압과 고연령이 독립 예측인자로 확인되었음을 기술하고 기존 연구와 동일한 소견임을 지적함. 경계 고혈압인에서 고혈압의 위험인자가 많이 관찰되고 있으므로 아시아인의 고혈압 예방을 위해 개인의 생활습관 등을 개선해 위험요인을 줄여야 한다는 사실을 기술.

This study has veseral potential limitations. 제한문단을 도입. The first limitation is the variation in the blood pressure measurements. The present study was based on measurements taken during a single day. Incidence rated of hypertension among non-hypertensive individuals in the community are likely to vary depending on the variance of blood pressure measurements. Previous studies reported that the incidence rated of hypertension could be different due to repeated measurements on several occasions, instead of a single day of reading. Accordingly, multiple measurements obtained on two or more occasions have been recommended for assessment of blood pressure status. However, most epidemiological studies have adopted the standardized methodologies based on measurements during a single day. Second, we were unable to exclude the possibility of selection bias. The loss to follow-up rate in this study exceeded 20%, a conventional standard beyond which the potential for bias increases if the pattern of missing subjects was not at random. Finally, the target population of the present study is confined to the residents in the rural area of AAA city. As it is quite difficult to maintain a cohort in urban area, a rural area was selected for this cohort study. Therefore, our results could not be generalized. 전개문단의 마지막으로 이연구에서 피할 수 없는 여러 제한점으로 측정오차, 대상자 선정의 비뚤림, 코호트 추적률의 저조, 한 농촌 지역의 국한된 대상자 등을 설명.

In conclusion, this study provides the first information on the short-term incidence rates of hypertension according to JNC VII criteria from a cohort study of general population in a rural area of Korea, which is a representative developing country in Asia. In this rapidly aging society, population-based preventive approach to decrease blood pressure, particularly in subjects with prehypertension, is needed to reduce hypertension 고찰의 정리문단인 동시에 논문 전체의 결론문단으로 논문 전체의 결론을 기술. 이연구를 통해 얻은 급변하는 사회인 우리나라 농촌에서 고혈압 발생의 위험인자를 제시하고 경계 고혈압 관리가 중요함을 주장. 주제문단으로 이연구의 핵심결과를 정리해 설명하면서 고혈압의 빈도를 제시, 전개문단에서 이 고혈압과 경계 고혈압에 대한 국내외 기존 연구결과와 비교 설명. 그 다음 문단은 미국의 코호트 연구와 비교설명하고 고혈압과 심장질환 사망률의 관련성을 고찰. 그 다음 문단은 아시아인의 특성과 생활습관의 개선 필요성을 언급. 이 연구결과의 제한점을 고찰하고 마지막 정리문단에서 연구결과를 토대로 하는 결론을 제시. 이 고찰은 전형적인 결과제시-전개: 비교- 전개: 의미부여- 제한점- 결론 유형.

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One author, EEE, was employed by the sponsor pharmaceutical company, but he was involved in study design and arrangement of sampling only. He was not involved in the data production, analysis, interpretation, or in preparation of the manuscript.

Table

Table 5. multivariate logistic regression analysis for incident hypertension (표제목)

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Odds ratio | 95% confidence interval | P value |
| Age |  |  |  |
| Male |  |  |  |
| Prehypertension |  |  |  |

Figure

Fig. 2. Microscopic findings of the livers of mice. (A) Control group, H&E stained, \*100, (B) High power view of control group, H&E stained, \*400

Legend of figures

Fig. 1. Survival of C.sinensis adult worms in 6 different media. Worms survived less than 3 days in 0.85% NaCl and up to 7 dayts in 1\* PBS. RPMI-1640 showed best survival rate among the media studied, among inorganic media 1 X Locke’s solution showed highes survival (up to 57 days).

Fig. 2. Survival of C.sinensis adult worms in different concentrations of bovine bile in 1 X Locke’s solution. The worm failed to survive more than a day at 1% and 0.1% concentration of bile. In 0.05% concentration, though the sorm survived up to 14 days, howeverm, survivality fell very sharply after 7 days. Bile at 0.005% concentration showed best survival advantages among the concentration studied.