Prevalence of hypertension in an urban community in Sudan

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Abstract
Background: Hypertension has become a public health problem in both developed and developing countries with serious morbidity and mortality.
Objectives: To study the prevalence and symptoms of hypertension in Khartoum area.
Methods: This is a cross-sectional population based study among a random sample of civil employees, factory workers and secondary schools students using a structured questionnaire. Hypertension is defined as BP ≥ 140/90.
Results: In a sample of 500 subjects, hypertension was detected in 91 (18.2%) subjects. Forty-two subjects (8%) had newly discovered hypertension and 49 (10.2%) were known hypertensive. There was no difference in symptoms between hypertension versus normotensives. Only 40.8% were on drug treatment, of whom 42.6% were compliant.
Conclusion: It seems that there is a rise in prevalence of hypertension in Sudan.

Introduction
There is a rapid increase in the prevalence of cardiovascular disease in the developing countries[1,2] Despite current low prevalence rates of hypertension in some countries, the total number of hypertensive drug treatment indicates that developing countries cannot afford the cost of new treatments as developed countries, thus leading to more morbidity and mortality.
Hypertension is highly prevalent in Egypt and the rates of awareness, treatment, and control are relatively low[2]. There is also an increased prevalence of hypertension in rural and urban areas of Tanzania, with low levels of detection, treatment and control[3]. High blood pressure was found to be common among the urban poor from Ibadan in Nigeria (17%), and substantially more prevalent in salaried workers in Harare, Zimbabwe (26%)[4].
In Sudan, the prevalence of hypertension in an urban population was estimated as 7.5% -10% as reported more than a decade ago[5]. This study set out to determine the prevalence and symptomatology of hypertension in Khartoum area in the year 2002.

Methods
This study was carried out over a 5 months period in the year 2002 among a sample of 500 Sudanese subjects in Khartoum Province. The subjects were randomly selected from factory workers, civil employees, and secondary school students.
Using a structured questionnaire subjects were asked about symptoms such as headache, visual disturbances, use of antihypertensive medications and family history of hypertension. All randomly selected subjects who agreed to be studied were included. Blood pressure was measured in the right arm in the sitting position using the standard mercury sphygmomanometer with appropriate cuff size after the patient remained seated for the last 5 minutes. Systolic BP was recorded at phase I Korotkoff’s sound and diastolic BP at phase V[6]. The average of 3 readings after a 5 minutes rest was recorded. Subjects were labeled as hypertensive if the BP was equal to or more than 140/90 or were taking antihypertensive medications[7].

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Results

The study population consisted of 500 subjects (329 male and 171 female). Age distribution is shown in Table 1.

<table>
<thead>
<tr>
<th>Age Distribution according to BP status (n= 500 subjects)</th>
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<tbody>
<tr>
<td>Age distribution</td>
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<tr>
<td>Normal BP</td>
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<tr>
<td>Known hypertensives</td>
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<td>New hypertensives</td>
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Hypertension was detected in 91 subjects (18.2%). Of these, 49 (9.8%) were known hypertensives, whereas 42 (8.4%) were newly diagnosed. There were 67 men and 24 women. Prevalence of hypertension in the different study groups is shown in Table 2.

<table>
<thead>
<tr>
<th>Blood pressure among different occupations</th>
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<tr>
<td>Factory workers (n=246)</td>
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<tr>
<td>Known hypertensive</td>
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<tr>
<td>Newly diagnosed hypertension</td>
</tr>
<tr>
<td>Normal BP</td>
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Symptoms among hypertensives

Headache was found in 38.1% and 39.6% of hypertensives and normotensives respectively (P=0.848); likewise, there was no statistical difference in the prevalence of visual disturbances among those with or without hypertension (P = 0.539).

Drug treatment

Only 20 out of 49 known hypertensives subjects were on treatment (40.8%). Calcium channel blockers were the commonly used drugs (13 patients), while four patients and three patients used beta-blockers and combination drugs respectively. Compliance with treatment was detected in only 16 out of the 49 known hypertensives (42.6%).

Discussion

The present study has confirmed the increasing prevalence of hypertension in urban communities in Sudan from 7.5% in 1985 to 18.2% in 2002 (the present study). However, this prevalence is lower than that in Egypt, and it is approaching that in other African nations.[3,4].

This represents an escalation of this serious problem, which may lead to an increased rate of morbidity, and mortality among our younger population, particularly stroke, renal impairment, and cardiac events.[8,11]. This new trend could be attributed to increasing urbanization and changes in life style, dietary habits that mimic western style, and possibly increasing stress. Hence, this problem will need a new look at the policy of disease control in developing countries[7].

It is important to note the lack of difference in symptoms between hypertensives and those with normal BP, confirming the so-called ‘silent’ nature of hypertension[12].

Moreover, it is alarming to find that only 40.8% of hypertensive patients were on treatment and that the majority of them were non-compliant with treatment. This sad fact will certainly increase the frequency of target organ complications and thus will further increase the burden on the already ailing health systems in the developing nations[11,13].

In conclusion, this study has demonstrated a high prevalence of hypertension in an urban Sudanese community and should ring the bell for the quick adoption of serious measures by the health providers to effectively address this problem in order to prevent the catastrophic complications of this disease. These measures should include well constructed national hypertension programmes to increase awareness of and educate the public about this silent killer as well as making antihypertensive drugs more available and affordable.

References

National Hypertension project (NHP) Investigative team. *Hypertension* 1995; 26: 886-890


