

OVERVIEW & EPIDEMIOLOGY OF HYPERTENSION IN SINGAPORE

A/Prof Terrance Chua Siang Jin

ABSTRACT

In Singapore, hypertension is the most common condition noted at outpatient visits, present in 16.6% of all polyclinic attendances in 2009. Close to a quarter of all Singaporeans aged 18 to 69 have hypertension. Based on successive National Health Surveys, the crude prevalence of hypertension was 22% in 1992, rising to 27% in 1998 and falling to 24.9% in 2004. In this survey, 38.5% of hypertensives were previously undiagnosed and undiagnosed hypertension was more common in men (44%) compared to women (30%). Blood pressure screening, both in opportunistic settings when patients seek medical care for unrelated problems and as part of mass public health screening is therefore important. Apart from increasing age, other factors such as gender (men), obesity, and diabetes are established risk factors for hypertension. The percentage of hypertensive patients with good BP control (<140/90 mmHg) was 49.5% from the 2004 National Health Survey, with better control in Chinese compared to Malays and Indians. However, only 37.7% of hypertensives had good control in a 2006 survey of hypertensive patients in 9 polyclinics. This was much worse in an elderly population, with 64% not being optimally controlled. Effective treatment of hypertension has been clearly shown to reduce the risk complications, even in the elderly. Screening for hypertension and effective treatment remains an important goal for all of us. There is growing evidence of the importance of effective patient education and home monitoring in the control of hypertension.

Keywords: Hypertension, Prevalence, Singapore, Screening, Treatment, Elderly

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PREVALENCE

In Singapore, hypertension is the most common condition noted at outpatient visits, present in 16.6% of all polyclinic attendances in 2009. Close to a quarter of all Singaporeans aged 18 to 69 have hypertension¹. Based on successive National Health Surveys, the crude prevalence of hypertension was 22% in 1992, rising to 27% in 1998 and falling to 24.9% in 2004¹. The prevalence rises with age, from 8% between 30-39 years to 56% for those aged 60 to 69 years old in the 2004 survey.

Comparing our figures to the west, age- and sex-adjusted prevalence of hypertension was 28% in North American countries and 44% in the European countries at the 140/90 mm Hg threshold^{2,3}.

UNDIAGNOSED HYPERTENSION

One major concern at the 2004 survey 1 was that 38.5% of hypertensives were previously undiagnosed, though this represents some improvement over 1998, when 53% were undiagnosed. Undiagnosed hypertension was more common in men (44%) compared to women (30%). Hence the importance of screening, both in opportunistic settings when patients seek medical care for unrelated problems and as part of mass public health screening.

RISK FACTORS

Age is an obvious risk factor for hypertension. In one survey of elderly Singaporeans (age > 60 years), 73% were hypertensive⁴, 30.8% were unaware of the condition, and 32% were not being treated. In contrast, in a military survey⁵ of young conscripts in Singapore, hypertension was found to be uncommon (1.6%).

Among the few that had hypertension in this age-range, there were strong associations with obesity and low socio-economic status. Apart from increasing age, other factors such as gender (men), obesity, and diabetes are established risk factors for hypertension.

There are also survey data to suggest a higher prevalence of hypertension in low-income neighborhoods⁶. There is also an established link between obstructive sleep apnoea and hypertension, and this has also been demonstrated in Singapore populations⁷. Ethnicity also appears to influence the prevalence of hypertension.

In the 2004 survey, the highest prevalence of hypertension was in Chinese men, then Indians, and Malays, whereas for women, it was more common in Malays, then Chinese and Indians¹. Salt intake is clearly linked to hypertension. The 1998 National Nutrition Survey revealed that 9 out of 10 Singaporeans exceeded the recommended allowance of salt.

BLOOD PRESSURE CONTROL

The percentage of hypertensive patients with good BP control (<140/90 mmHg) was 49.5% from the 2004 National Health Survey 1, with better control in Chinese compared to Malays and Indians. However, only 37.7% of hypertensives had good control in a 2006 survey of hypertensive patients in 9 polyclinics.⁸ This was much worse in an elderly population,

TERRANCE CHUA SIANG JIN, Deputy Director, Senior Consultant, Cardiology, National Heart Centre Singapore

with 64% not being optimally controlled⁴. There is the pervasive belief that elevated blood pressure is “normal” as one grows older, and therefore no treatment is needed. Yet randomized controlled trials have clearly shown benefit, even in elderly patients⁹. Care should be taken to avoid orthostatic hypotension, though, in this population.

COMPLICATIONS OF HYPERTENSION

Apart from stroke, heart failure and myocardial infarction, renal damage is a well established consequence of hypertension, hence the value of screening for microalbuminuria as a marker of end-organ damage. One local study found that 48.5% of hypertensive diabetics had microalbuminuria¹⁰.

CHRONIC DISEASE PROGRAMS

There is growing evidence of the importance of effective patient education and home monitoring in the control of hypertension. One local pilot study in diabetics found significantly better control of diabetes and hypertension using a comprehensive chronic care program in a primary care setting¹¹.

CONCLUSIONS

- Although there are encouraging trends based on serial national health surveys, hypertension continues to be a highly prevalent condition afflicting one-quarter of Singaporeans, and a major risk factor for stroke, heart failure, myocardial infarction and renal failure.
- Despite awareness of this condition, close to 40% of patients were undiagnosed, and only half had good control in 2004.
- Yet hypertension today is easily treated with a wide array of medications available. Moreover effective treatment of

hypertension has been clearly shown to reduce the risk complications, even in the elderly.

- Therefore screening for hypertension and effective treatment remains an important goal for all of us.

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LEARNING POINTS

- **In Singapore, hypertension is the most common condition noted at outpatient visits, present in 16.6% of all polyclinic attendances in 2009.**
- **In 2004, close to 40% of patients were undiagnosed, and only half had good control.**
- **Apart from increasing age, other factors such as gender (men), obesity, and diabetes are established risk factors for hypertension.**
- **Only 37.7% of hypertensives had good control (<140/90 mmHg) in a 2006 survey of hypertensive patients in 9 polyclinics. This was much worse in an elderly population, with 64% not being optimally controlled.**
- **Effective treatment of hypertension has been clearly shown to reduce the risk complications, even in the elderly.**
- **There is growing evidence of the importance of effective patient education and home monitoring in the control of hypertension.**
- **Screening for hypertension and effective treatment remains an important goal for all of us.**