

Original research article

Prevalence, awareness, and control of hypertension in young adults – a prospective study

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Abstract:

Introduction: High blood pressure (BP) is ranked as the third most important risk factor for attributable burden of disease in south Asia . Hypertension (HTN) exerts a substantial public health burden on cardiovascular health status and healthcare systems in India.

Aim: To analyze the prevalence of systemic hypertension in young adults attending non communicable disease outpatient department in tertiary care government medical college hospitals in western part of Tamil nadu

Materials and methods: all the patients attending the ncd out patient departments in government medical colleges are taken for study .between Jan 2018- Nov 2018 and the prevalence of hypertension is taken

Results : Total number of patients Screened,1,33,423 male,59,474 female, 73949 newly detected hypertensives , 28,018, newly detected young (below 30 years) hypertensives;336, primary 333 hypertension secondary hypertension 3(two renal artery stenosis and one pheochromocytoma

Conclusion: it is essential to screen all patients irrespective of age for hypertension. Early identification and early treatment will prevent complications. To educate and create awareness is the need of the hour.

Key words: young hypertensives, awareness , screening, treatment.

INTRODUCTION:

High blood pressure (BP) is ranked as the third most important risk factor for attributable burden of disease in south Asia (2010). Hypertension (HTN) exerts a substantial public health burden on cardiovascular health status and healthcare systems in India. HTN is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease (CHD) deaths in India . The WHO rates HTN as one of the most important causes of premature death worldwide . In an analysis of worldwide data for the global burden of HTN, 20.6% of Indian men and 20.9% of Indian women were suffering from HTN in 2005. The rates for HTN in percentage are projected to go up to 22.9 and 23.6 for Indian men and women, respectively by 2025_Recent studies from India have shown the prevalence of HTN to be 25% in urban and 10% in rural people in India . According to the WHO 2008 estimates, the prevalence of raised BP in Indians was 32.5% (33.2% in men and 31.7% in women However, only about 25.6% of treated patients had their BP under control, in a multicenter study from India on awareness, treatment, and adequacy of control of HTN .

The pooled prevalence of HTN for the rural and urban south Indian population was 21.1% and 31.8% , respectively There was no significant difference between the rural and urban prevalence of HTN in south India

Awareness treatment and control of blood pressure

The pooled estimate for awareness of BP in rural and urban India was 25.1% and 41.9%, respectively. The pooled estimate for the percentage of treated among those diagnosed with HTN in rural and urban areas was 24.9 and 37.6, respectively. The pooled estimate for percentage of hypertensive patients having their BP under control in rural and urban India was 11% and 20%, respectively. Significant differences were noted in the rural and urban areas for awareness and control of HTN. No statistically significant difference was noted in the rural and urban areas.

Hypertension is the leading cause of death worldwide. Globally and locally there has been an increase in hypertension in children, adolescents and young adults. 90% of young patients will have essential or primary hypertension, while only a minority 1 billion persons worldwide suffer from hypertension. In the 2010 Global Burden of Disease study 9 million deaths were attributed to hypertension, making it the leading cause of death worldwide. The rate of hypertension has risen over the past few decades to reach epidemic proportions among the young (defined in this article primarily as adolescents and adults 140/90 mmHg). Approximately a third of the adult population is hypertensive. Among adolescents and young adults (15 - 24 years old) the incidence is ~10%. Worryingly, there has been a startling increase, with the prevalence approximately doubling in this age group within a decade. The reasons include the 'risk transition', which is characterised by urbanisation, a change in diet and lower levels of physical activity. There are few data on the long-term outcomes of hypertension in the young. However, the available evidence shows that young people with hypertension have similar target-organ damage as older hypertensives, such as left ventricular hypertrophy (LVH), micro albuminuria and carotid intimal thickness. These are associated with adverse cardiovascular outcomes. Pathophysiology The causes of hypertension in the young can be divided into primary and secondary. Primary hypertension (also called essential hypertension) has no specific cause, although genetic and environmental factors play an important role. More than 90% of young people with hypertension have primary hypertension. It is often associated with a family history of hypertension and frequently accompanied by obesity or the metabolic syndrome. International population surveys show an increase in obesity in children and adolescents, which parallels an increase in the prevalence of hypertension in the same age groups. Hypertensive children and adolescents go on to become hypertensive adults – a phenomenon known as 'BP tracking'. Novel mechanisms implicated in the pathogenesis include low birth weight (the Barker-Brenner hypothesis) and hyperuricaemia. Low-birth-weight and/or small-for-gestational-age infants have a lower nephron number at birth (the so-called 'nephron endowment'), which induces physiological changes that lead to hypertension and chronic kidney disease later in life. Hyperuricaemia as a cause for hypertension in adolescents is an intriguing concept. Experimental data indicate that hyperuricaemia invokes renal changes that drive hypertension. This 'hyperuricaemic hypertension' has in small studies been shown to be reversible with urate-lowering therapy, at least in the early stages, i.e. soon after diagnosis. There is not yet enough evidence to recommend routine use of urate-lowering therapy in young patients.

Secondary hypertension

This form of hypertension affects approximately 10% of young hypertensives. The probability of secondary hypertension is inversely proportional to the age of the patient (i.e. higher in a school-going child, but lower in a young adult). The importance of identifying secondary hypertension lies in the potential for cure with appropriate treatment. The causes of secondary hypertension can be further divided as follows: • renal

parenchymal disease (e.g. glomerulonephritis) • renovascular disease (e.g. renal artery stenosis) • mineralocorticoid-mediated hypertension (e.g. primary hyperaldosteronism) • catecholamine-mediated hypertension (e.g. pheochromocytomas) • medication (e.g. the oral contraceptive pill) • abuse of cocaine or amphetamines • coarctation of the aorta • rarer causes.

Clinical features Most young patients are asymptomatic and diagnosed during screening or when presenting with an unrelated condition. It is therefore imperative that opportunistic screening should take place at every opportunity. A minority present with a hypertensive emergency (such as heart failure, renal failure or malignant hypertension). The history should enquire about whether a raised blood pressure has been recorded previously and the circumstances in which the hypertension was first noted; diabetes mellitus and premature cardiovascular disease; use of medication (especially oral contraceptives); use of alcohol and tobacco products; and abuse of illicit drugs, especially methamphetamines, which is associated with severe hypertension and chronic kidney disease. Blood pressure should be recorded using an approved and calibrated electronic device or mercury sphygmomanometer. Raised blood pressure should be confirmed with multiple readings, and consideration should be given to performing out-of-office blood pressure measurement (such as home blood pressure or 24-hour ambulatory blood pressure monitoring) to exclude 'white coat' hypertension.

The examination is focused on establishing if there is target-organ damage or whether there are features that suggest a secondary cause.

The presence of target-organ damage should prompt the institution of pharmacotherapy and closer follow-up.

The clinician should look for: our results in brackets an elevated body mass index (BMI) and increased waist circumference (18%) features of insulin resistance (e.g. acanthosis nigricans)(12%) urinary dipsticks to detect primary renal disease (e.g. glomerulonephritis) or renal damage a pressure overloaded apex in keeping with LVH (4%) funduscopy to check for retinal hypertensive changes. Features that point to a secondary cause include(2%) pulse discrepancies (this may suggest a vasculopathy, such as Takayasu's arteritis) (.5%) radiofemoral delay (this suggests coarctation of the aorta)- abdominal bruits (these are suggestive of renal artery stenosis)(0.5%) flushing, sweating and tachycardia (this may be a clue to the presence of a pheochromocytoma)(0.3) acne, striae, moon facies (these suggest Cushing's syndrome) positive dipsticks for blood and/or protein.(2%)

Investigations

We recommend that young hypertensives should be routinely investigated for secondary causes, given the scale of the epidemic and that the majority of patients have primary hypertension. Baseline tests that should be routinely performed include serum potassium (hypokalaemia may suggest primary hyperaldosteronism), serum creatinine and determination of estimated glomerular filtration rate urine microalbumin-to-creatinine ratio fasting blood glucose and lipid profile 12-lead electrocardiogram (ECG). The clinician should note that the ECG is not validated for diagnosis of LVH

Referral should be considered in the following circumstances -blood pressure >180/110 mmHg the presence of target-organ damage or complications of hypertension (e.g. heart failure and renal impairment) resistant hypertension suspected secondary causes.

Results:

Total number of patients screened, 1,33,423 , Male, 59,474 (45%) Female, 73,949 (55%) , Newly detected hypertensives , 28,018, (21%), young (below 30 years) hypertensives; 336, (1.1%) (Male 278 (82%) female 58 (18%) , primary 333 (99.2) hypertension secondary hypertension 3 (0.8%) (two renal artery stenosis and one pheochromocytoma

Baseline characteristics of study participants (336).

Characteristics	Category	Frequency
Age (years)	Below 20	27
	21-25	131
	26-30	178
Aetiology	Primary	333
	Secondary	3
Body Mass Index (kg/m ²)	19-25	121
	>25	215
Working STYLE	BLUE COLLAR	283
	WHITE COLLAR	53
Awareness about hypertension	YES	NO
Sign and symptoms	179	157
Complications	198	138
Drugs ,duration,dose	121	215
Side effects of drugs	102	234
Family Income in rupees	≤ 1,00,000	285
	>1,00,000	51
Other Health Problems	Yes	15
	No	321

Management of young hypertensives. , the increased prevalence of traditional risk factors in the young, including obesity, diabetes mellitus, and renal disease, increase the risk of developing hypertension in younger adults. Psychosocial factors may also be contributing factors to the increasing incidence of hypertension in the younger population. Increased left ventricular wall thickness and mass are increasingly found in young adults on routine echocardiograms and predict future cardiovascular events. This increasing incidence of hypertension in the young calls for early surveillance and prompt treatment to prevent future cardiac events.

The primary outcome was time from date of meeting hypertension criteria to antihypertensive medication initiation, or blood pressure normalization without medication. Kaplan-Meier analysis was used to estimate the probability of antihypertensive medication initiation over time. Cox proportional-hazard models (HR; 95 % CI) were fit to identify predictors of delays in medication initiation, with a subsequent subpopulation analysis for

young adults (18–39 years old), life style modification, regular exercise, walking, low sodium diet then drugs are selected on individual basis, tailor made after careful analyze of blood sugar, renal status and associated copd, hypo thyroid and other status

Conclusion:

Hypertension in young people has doubled during the past 10 years and has necessitated a re-evaluation of our approach to their evaluation, investigation and treatment. There is an urgent need to address lifestyle issues that are driving this epidemic. It is recommended to screen all to deduct early , create awareness and to avoid complications in future.

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www.iosrjournals.org 63 | Page Novel Methods And Life Style Modification Remedies For Hypertension Reduction-Overview Dr.T.RavikumarM.D(Gen med)1 , Dr.P.SaravananM.D(Gen med)2 , Dr.Chethan Bharadwaj. A (M.D) Gen med3 1Professor Of Medicine,Govt. Mohan Kumaramangalam Medical College And Hospit
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