

Editorial

Hypertension Control in India: Lessons from Jaipur Heart Watch

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DOI:10.37821/ruhsjhs.6.1.2021.374

Forty years ago, we set upon a journey on cardiovascular disease epidemiology and prevention of ischemic heart disease (IHD).¹ The initial focus was on estimation of burden of IHD in urban and rural medical clinics in Rajasthan and importance of conventional risk factors using secondary prevention data. We identified that smoking, hypertension, and high cholesterol were important risk factors.²⁻⁴ To determine burden of IHD risk factors in rural and urban populations in the state we initiated a series of epidemiological studies under the banner of Jaipur Heart Watch (JHW) in early 1990's.¹ That hypertension or high blood pressure (BP) is a major cardiovascular risk factor has been well known for decades.⁵ Our studies also reported high burden of this condition in both rural and urban locations in the state of Rajasthan.⁶ We also documented that hypertension was increasing in India and the current nationwide studies have reported that it is present in 20-24% urban and 15-20% rural populations.^{7,8} Indeed, current data show that hypertension is the most important risk factor for disease burden and mortality in the country.⁹ Prospective studies especially the Prospective Urban Rural Epidemiology (PURE) study, in which we are one of the collaborators, has reported that hypertension is the most important cardiovascular risk factor globally as well as in our region.¹⁰

Status of hypertension control: The most important issue in prevention of hypertension-related diseases (IHD, strokes, ocular, and renal disease, etc.) is control of blood pressure.⁵ Target BP of less than 140/90 mmHg has been recommended for reducing risk by various international guidelines, although the recent American guidelines recommend a target of <130/85 mmHg for cardiovascular disease prevention.¹¹ In the present focus issue on hypertension, Gautam shares the journey of evolution of hypertension guidelines and BP control targets over the past century.¹² In most cases, hypertension control to tar-

gets can be achieved using a combination of lifestyle modifications (weight loss, salt restriction, healthy diet intake, exercise, and regular physical activity, and avoidance of smoking and alcohol) along with a number of inexpensive widely available medicines.⁵ Then why is the control of BP low globally and still lower in India and other developing countries.¹³ I believe that social determinants of health- poverty, illiteracy, lack of universal healthcare, status of health financing, low affordability and low availability are important. A multitude of social factors specific to India are important and have been highlighted in one of our previous studies,¹⁴ and in an editorial in *Lancet* some months ago.¹³

In JHW studies, we evaluated the status of hypertension awareness, treatment, and control over a 25-year period using serial cross sectional studies also known as interrupted time-series studies from the years 1991-1992 to 2015-2017.¹⁵ JHW-1 urban and rural studies conducted in early 1990's reported a very low awareness, treatment, and control status in those with hypertension and known hypertension. The situation has significantly improved since then and subsequent studies have reported increasing awareness, treatment, and control (Figure). Data from the more recent studies (JHW-6 and upcoming JHW-7) have reported that hypertension awareness in an urban Indian population is currently about 50-60%, treatment in 30-40%, and control in 20-25%. Despite the increase, the situation in hypertension control is still below par and much lower than studies in most developed countries where awareness is in more than 80% and control in about 50-70%.¹⁶ A few developing countries in Africa and South America have better control rates than us.¹⁷

Strategies for better hypertension control: A number of strategies are available to achieve better BP control.¹⁸ These include improving social determinants of health,

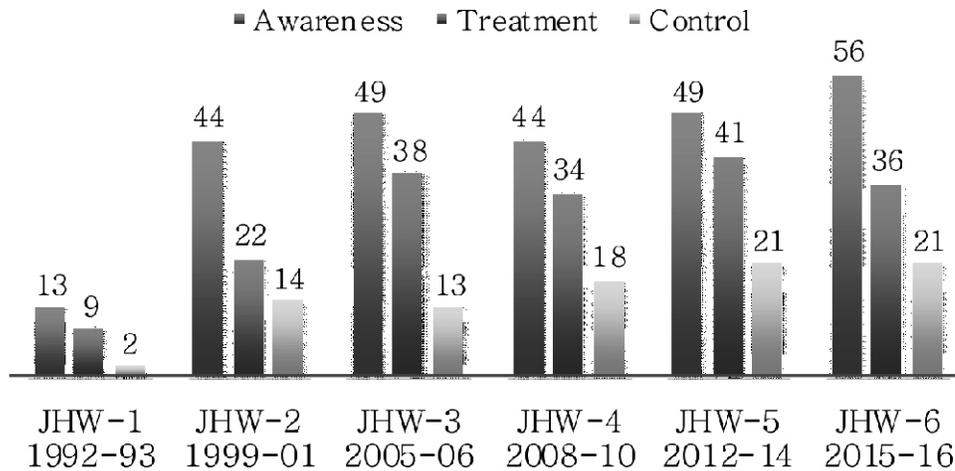


Figure: 25 year trends in hypertension awareness, treatment and control in Jaipur Heart Watch (JHW) Studies.

universal healthcare, better primary and secondary level care, better education of physician and non-physician health workers availability and affordability of high-quality low-cost medicines, and better compliance and adherence to them by patients.

World Health Organization and United Nations' Sustainable Development Goals have identified important social determinants in context of hypertension.¹⁹ These include quality universal education, elimination of poverty, zero hunger, decent work and economic growth, reducing inequalities, sustainable communities and cities, responsible consumption and production, climate action, and fostering partnerships for the goals. Most countries, including India are signatories to this. Better quality universal healthcare and availability and affordability of healthcare are also important. The US Surgeon General has recommended three goals to support improvements in hypertension control: (a) make hypertension control a national priority; (b) ensure that the places where people live, learn, work, and play support hypertension control; and (c) optimize patient care for hypertension control.²⁰ More focus on all these factors is needed in India.

A comprehensive hypertension management and treatment protocol should be developed in India similar to most developed countries. The US Surgeon General has provided useful guidance in this regard.²⁰ The protocol should focus on accurate BP measurement, setting optimal BP targets, overall cardiovascular risk assessment, team-based care approach, focus on lifestyle modification, guidance for medication initiation and intensification,

consideration for medicine costs, supportive strategies for promoting medication adherence including technological innovations, and regular follow-up. Comprehensive cardiovascular risk reduction is crucial to achieve morbidity and mortality related to hypertension. Only then the hypertension control would be optimal.

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