Editorial



World Hypertension Day: Contemporary issues faced in India

World Hypertension Day was initiated by the World Hypertension League in 2005 to raise awareness regarding high blood pressure (BP) and its complications. The day is celebrated on May 17 every year by countries across the globe in an attempt to curb the 'silent killer' that has long been recognized as one of the major risk factors for cardiovascular disease and premature deaths worldwide. According to the World Health Organization, in 2015, raised BP was responsible for 7.5 million deaths, about 12.8 per cent of the total of all deaths globally¹. The Global Burden of Disease (GBD) study of 2016 showed that high systolic BP, defined as >140 mmHg, was the second leading risk factor in terms of attributable disability-adjusted life years (DALYs) in men (122.2 million DALYs) after smoking and the leading risk factor in women (89.9 million DALYs)².

Hypertension is a growing problem in India and causes significant burden on the health system. According to data from the GBD study of 2016, hypertension led to 1.63 million deaths in India in the year 2016 alone². GBD data also showed that over half of the deaths due to ischaemic heart disease (54.2%), stroke (56.2%) and chronic kidney disease (54.5%) were attributable to high systolic BP3. India has also been experiencing an increase in the prevalence of hypertension⁴. A cross-sectional, population-based study on a large nationally representative sample of 1.3 million individuals carried out between 2012 and 2014 revealed that the crude prevalence of hypertension in India was 25.3 per cent⁵. Hypertension prevalence was common even among younger age groups, with approximately one out of every 10 individuals aged 18-25 yr suffering from it⁵.

The hypertension epidemic in India is further complicated by the fact that a large proportion of individuals is unaware of their hypertension status. A systematic review and meta-analysis of 142 studies on prevalence, awareness and control of hypertension in India published between 1950 and 2013 showed that only 25 per cent of rural and 42 per cent of urban Indians were aware of their hypertension status⁶. The theme of this year's World Hypertension Day is 'Know your numbers' and focuses on the importance of screening for early detection and treatment of hypertension⁷. The large proportion of hidden disease in the country augments the relevance and importance of the theme in the Indian context.

What have we done to improve screening?

As a response to the low awareness levels, the Government of India launched the Universal Screening Programme for Hypertension, Diabetes Mellitus and Three Common Cancers (breast, cervix and oral cancer) in 2017 under the National Health Mission⁸. The programme is part of the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular disease and Stroke, and is supported by the District NCD cell⁹.

As per the operational guidelines of the programme, all men and women above the age of 30 yr are screened for oral cancer, diabetes and hypertension⁹. While screening for cancers is done once in five years, diabetes and hypertension screening is done annually⁹. Auxiliary nurse midwife (ANM) and accredited social health activist (ASHA) are responsible for organizing screening activities at the village or subcentre that includes health promotional activities to educate individuals, families and communities regarding healthy behaviours⁹. As per the guidelines, all individuals with systolic BP >140 mmHg and diastolic BP >90 mmHg are to be referred to the medical officer at the nearest facility for confirmation, laboratory investigations and initiation of treatment⁹. State governments in India have been

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instructed to ensure the availability of drugs at primary health centres and have recommended the creation of an information and communication technology to capture complaints about shortfall or defect⁹.

As per a newspaper article published recently, over 13 million individuals have been screened over the last one year¹⁰. According to the report, the initiative is being carried out through 10,512 health and wellness centres (HWCs), over half of which are located in five States - Andhra Pradesh, Tamil Nadu, Uttar Pradesh, Karnataka and Kerala¹⁰. In a similar effort, over the last two years, the International Society of Hypertension in conjunction with the World Hypertension League has been implementing the 'May Measurement Month' - a global awareness campaign that aims to improve access to screening of BP¹¹. Following its inception in 2017, the campaign has screened approximately 2.7 million individuals in over 100 countries¹¹. The 1.2 million individuals screened through the global campaign in 2017, included 190,955 individuals in India¹². The Indian campaign was conducted in over 500 screening sites with the help of over 5000 volunteers¹³. Among the participants from India that were included in the final analysis, 31.8 per cent were found to have raised BP¹³. Only 44 per cent of the individuals with hypertension were aware of their status prior to the screening initiative¹³.

Universal screening and challenges to its implementation

The core rationale behind the government-led universal screening programme has been improving equity and awareness. The initiative hopes to give underprivileged sections of the community, such as the elderly, women and the economically backward, who otherwise have limited access to the health system, an opportunity to be screened and started on treatment early. The operational guidelines state that screening is to be conducted at the community level so that no individual has to travel for more than half an hour in order to be screened⁹. According to the National Health Mission document, the programme also aims to improve overall awareness regarding non-communicable diseases and risk factors through increased information, education and communication activities9. It is envisioned that risk assessment by the ASHA will in itself enable increased understanding among the respondents of risk factors and the importance of screening9.

This raises the obvious question - is universal screening the ideal solution for improving equity and

low awareness levels in resource-poor settings as seen in India? The resources required to carry out this massive undertaking in terms of workforce, money and infrastructure are enormous. The programme is being carried out through the HWCs, the numbers of which have already fallen short of the target for the year 2018-2019¹⁰. Approximately 10,000 HWCs have been operationalized against the target of 15,000, and even these are unevenly distributed among the States¹⁰. The training of the grass-root level workers for screening of the five diseases and ensuring proper technique of screening is another vital and resourceintensive component of the programme. The first step in conducting the initiative is the arduous task of active population enumeration of all individuals above 30 yr of age and their risk assessment by the ASHA worker, which demands large numbers of trained workforce and man-hours9. It is also important to bear in mind that the ASHA/ANM is required to carry out these activities in addition to the numerous tasks that they are hitherto entrusted with. Moreover, the feasibility of repeating this exercise on an annual basis is a matter of concern.

Screening is important, so is the tool used for screening

As Kaplan said, BP measurement is the 'clinical procedure of greatest importance that is performed in the sloppiest manner'14. Physicians and other healthcare professionals are yet to perfect the skill of auscultatory BP measurement that was developed by Riva-Rocci and Korotkoff over a hundred years ago. The accuracy and interpretation of a BP measurement is dependent on individual-level factors, the device being used and the observer, of which the observer is often described as the most fallible component¹⁵. In 1965, Rose classified observer error into three categories namely, systematic error, terminal digit preference and observer prejudice or bias¹⁶. Although most of these observer-level errors can be avoided by replacing manual devices with automated ones, the highly labile nature of BP itself can affect the accuracy and reliability of a measurement¹⁷. The observer should be aware of the considerable variability that may occur in BP from moment to moment with respiration, emotion, exercise, meals, tobacco, alcohol, temperature, bladder distension and pain¹⁵. A simple way to reduce variability and improve the accuracy of the BP measurement is to take repeated measurements in the same visit. However, often, due to time constraints, healthcare professionals diagnose or decide management plan on the basis of a single measurement18.

Improper measurement and interpretation of office BP can lead to overestimation of a patient's true BP and inaccurate classification, which in turn exposes the patient to unnecessary treatment and its associated adverse effects. Wrongly classifying an individual as hypertensive also increases the burden on the primary as well as tertiary care systems and is a waste of national resources. In a recent study done on 678,490 individuals screened in the fourth National Family Health Survey, there was 63 per cent higher prevalence of hypertension when only the first reading was considered for diagnosis (16.5%) as compared to the mean of the second and third (10.1%) readings¹⁹. When this finding was applied on data from the District Level Household and Facility Survey-4 (DLHS-4) and Annual Health Survey (AHS), the prevalence of hypertension decreased from 25.3 to 19.8 per cent¹⁹. This would mean that an estimated 46 million people were being wrongly classified as hypertensive and potentially exposed to unnecessary treatment¹⁹.

On the other hand, underestimating BP and classifying a hypertensive as normal is a missed opportunity to start on lifestyle modification and pharmacotherapy. Misclassification also carries with it serious ethical implications. Cognizant of the consequences of improper screening technique, it is important to ensure that the training of ASHAs, ANMs and medical officers is carried out with diligence and followed up with refresher training at regular intervals. The classification of hypertension based on 'consistent elevation during two or more properly measured BP readings in sitting position' as recommended by the operational guidelines of the programme should be religiously adhered to⁹. It is also vital to have rigorous monitoring and evaluation mechanisms in place to ensure that protocols have been followed.

Raising awareness while ensuring continuum of care

Preventive strategies in hypertension should follow the principle of continuum of care. While improving awareness is essential, it is paramount to couple these efforts with better quality of treatment, which eventually results in the desired effect of better BP control. In the systematic review by Anchala *et al*⁶, only 24.9 and 37.6 per cent of those diagnosed to have hypertension in rural and urban areas, respectively, were on treatment. It is also rather unfortunate that only one-tenth of the rural and one-fifth of the urban hypertensive population had their BP under control⁶. In the May Measurement Month initiative conducted in India in 2017, over 80 per cent of the participants on antihypertensive medication had uncontrolled BP¹³.

As rightly mentioned in the operational guidelines of the programme, it is unethical to screen an individual without making provisions for referral, confirmation and treatment⁹. Initiation of any screening programme should be coupled with strengthening of the existing infrastructure to cater the large number of newly diagnosed hypertensives added to the system as a consequence of improved screening. Trained workforce, provision of good quality drugs, built-in referral systems and availability of necessary investigations for confirmation and evaluation have to be put in place. Screening has to be accompanied with treatment that is available, affordable and accessible, and also of good quality. Efforts to improve quality of care should include capacity building of health professionals to reduce therapeutic inertia as well as better follow up to ensure improved adherence. Only when these aspects are taken care of and individuals attain better control. will the objectives of the programme be achieved. The government-led programme recommends the provision of a month's supply of drugs for patients diagnosed with hypertension and ANM/ASHA visits each month for ensuring compliance, checking on diet and lifestyle modification, and measuring BP⁹. The guideline is idealistic, and difficulties in its implementation are obvious. However, it is of utmost importance to make certain that the directives of the programme are adhered to as far as possible.

The road ahead

As we embark on the difficult and laborious endeavour of universal screening, it is important not to forget the established best practices. Universal screening must not be treated as a replacement for opportunistic screening done at the health facility. Making sure that every individual that comes in contact with the health system is properly screened for raised BP, irrespective of his/her presenting complaints, is a simple and cost-effective way to improve awareness and early detection. The importance of opportunistic screening needs to be impressed upon all healthcare professionals working in the public as well as private sectors. It is also essential to continue populationlevel high-risk screening in States that do not have the capabilities and resources to initiate universal screening at present.

While the challenges are numerous, the efforts of the government to improve equity of health through universal screening are laudable. This bold and noble initiative of the government has the potential of reducing the burden of hypertension significantly if undertaken with care, caution and high levels of preparedness.

Conflicts of Interest: None.

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