



Know Your Blood Pressure; the Theme of World Hypertension Day 2014

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Dear Editor-in-Chief

Firstly World Hypertension Day (WHD) inaugurated in May 2005 and has become an annual event ever since (1).

The aim of the WHD is to promote public alertness of high blood pressure and to promote citizens of all countries to prevent and control this soundless killer, the modern epidemic (1). WHD was initiated firstly by the World Hypertension League (1).

High blood pressure (hypertension) is considered as the silent killer since it has no apparent symptoms. Investigations show that the disease involves more than 1.5 billion people global, and around seven million people die every year from hypertension (1-5).

The average rate of high blood pressure in men is 28.6% whereas it is about 23.9% in women. Firstly WHD inaugurated in May 2005 and has become an annual event ever since, then WHO devoted the 17th of May of every year to be the WHD to emphasize the hazards of this disease and to spread recognizing and alertness, which prevention is the main strategy to avoid various health risks linked to high blood pressure like heart and kidney diseases (1,5). It is evident that long-term

untreated hypertension can damage the arteries and vital organs through the body, leading to renal disease, heart disease, stroke, and other serious vision disorders (1,5,6).

Generally, it is thought that hypertension is the biggest single risk factor for death worldwide. Several recent studies from various continents have detected the higher prevalence of hypertension in the urban versus rural population. Urbanization usually is associated with increased income and adoption of an unhealthy lifestyle (4-7).

Generally, risk factors underlying the emergence of high blood pressure and related complications in the developing countries follow the similar pattern as those recognized in the developed world. Education and greater wealth seem to have a strong impact on the risk of high blood pressure, while this association may be confounded by lifestyle factors. Alongside with urbanization and improved income, there is a desire for modern suitability, like the adoption of unhealthy food habits with the alteration from traditional rural diets with a low glycemic index and a higher fiber content to a food rich in salt, saturated fats, and poor-quality carbohydrates such as fast foods (1,5, 6-9). Fur-

thermore, diminished physical activity and inactive occupations may be important risk factors for high blood pressure. Unfortunately, many investigations show that alertness of high blood pressure in the developing world population is low. In part, this likely reflects a low quantity of literacy and education. However it also appears to reflect a low level of access to medical care. Hence, WHO has taken a lead role in the progress of global strategies for the prevention of the noncommunicable diseases, like high blood pressure, and their risk factors (10-15). In fact, in developing populations, inadequate funds, and inexperience, are main barriers to high blood pressure diagnosis and therapy. There often is competition for limited financial resources with other important communicable causes of mortality and morbidity for example, malaria, HIV/AIDS, and tuberculosis. Additionally, money allocated to public health initiatives is much less than that in Western countries (1,5, 12-15) All together, these clarifications for the limited progress achieved to date should justify a more intensive collaborative approach to manage high blood pressure. One of the messages of WHD is lifestyle change, like increasing exercise and decreasing consumption of calorie-dense and fat-rich diets salt and tobacco will help prevent the development of advanced stages of high blood pressure. Smoking is a preventable cause of high blood pressure, and increasing alertness of the harmful effects of smoking should be more vigorously promoted (10-18). One of the under noticed items in the development of hypertension is nutritional and other exogenous environmental factors during development which may permanently affect the fetus in uterus. There is some evidences that low birth weight (LBW) and intrauterine growth restriction (IUGR) are associated with a greater risk of high blood pressure (6,15-20). Investigations have reported higher blood pressures in adults born with LBW, even after adjusting for some factors like, parental blood pressure, smoking, oral contraceptive use, current weight, and gender (12-22). It is assumed that low birth weight resulting to reduced nephron number may be one of the main factors in the development of high blood pressure in later life (12-20). Then

compensatory adaptation mechanisms following reduced proportion of nephron numbers consisting of glomerular hypertension, glomerular hyperfiltration and glomerular sclerosis well happened. These lesions might be worsened more by programmed alterations in renal vascular structure, kidney function and modifications in endocrine and metabolic homeostasis (1,5, 6, 20-22). Indeed, it was suggested that LBW may have longer term effects on the risk of high blood pressure. In developing country populations, nutritional deficit commonly persists into early childhood and even later. In fact, it is possible that early childhood growth patterns affect blood pressure in adulthood. Interestingly, it is possible that high blood pressure at old age is associated with size at birth and growth and development during early childhood (1,5, 6, 20-23).

In sum, optimal management of high blood pressure is important in preventing the risk of cardiovascular and renal diseases. Measurement of estimated glomerular filtration rate (eGFR), along with urine protein, preferably albumin, principally in patients with high blood pressure, is important for the early detection of renal disease. Appropriate treatment, largely targeting systolic blood pressure, has been encouraged. It should be noted that, treatment of systolic blood pressure ≥ 140 mm Hg mostly by renoprotective agents is our main stay as a nephrology point of view (1,5, 6, 20-23). Finally more and more countries are linking to the World Hypertension Day each year to promote alertness, prevention and control of high blood pressure.

The success of World Hypertension Day is due to the interest and voluntary action of various participants from each member country. We hope that, this combination of public and private stakeholders will continue to contribute to the realization of WHD aim and, hence, to improve high blood pressure control worldwide.

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References

1. Mittal BV, Singh AK (2010). Hypertension in the developing world: challenges and opportunities. *Am J Kidney Dis*, 55(3):590-8.
2. Shahbazian N, Shahbazian H, Mohammadjafari R, Mousavi M (2013). Ambulatory monitoring of blood pressure and pregnancy outcome in pregnant women with white coat hypertension in the third trimester of pregnancy: A prospective cohort study. *J Nephropharmacol*, 2(1):5-9.
3. Amiri M, Nasri H (2014). Secondary Hyperparathyroidism in chronic kidney disease patients; current knowledge. *J Parathyroid Dis*, 2(1):1-3.
4. Hernandez GT, Nasri H (2014). World Kidney Day 2014: increasing awareness of chronic kidney disease and aging. *J Renal Inj Prev*, 3(1):3-4.
5. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J (2005). Global burden of hypertension: analysis of worldwide data. *Lancet*, 15-21; 365(9455):217-23.
6. Asayama K, Thijs L, Brguljan-Hitij J, Niiranen TJ, Hozawa A, Boggia J, et al. (2014). Risk stratification by self-measured home blood pressure across categories of conventional blood pressure: a participant-level meta-analysis. *PLoS Med*, 11(1):e1001591.
7. Hajivandi A, Amiri M (2014). World Kidney Day 2014: Kidney disease and elderly. *J Parathyroid Dis*, 2(1):5-6.
8. Baradaran A. Primary hyperparathyroidism and kidney; recent findings (2014). *J Parathyroid Dis*, 2(1):7-10.
9. Campbell NR, Petrella R, Kaczorowski J (2006). Public education on hypertension: A new initiative to improve the prevention, treatment and control of hypertension in Canada. *Can J Cardiol*, 22:599-603.
10. Eriksson JG1, Forsén TJ, Kajantie E, Osmond C, Barker DJ(2007). Childhood growth and hypertension in later life. *Hypertension*, 49(6):1415-21.
11. Nasri H(2013). Impact of diabetes mellitus on parathyroid hormone in hemodialysis patients. *J Parathyroid Dis*, 1(1):9-11.
12. Nasri H(2013). Elevated serum parathyroid hormone is a heart risk factor in hemodialysis patients. *J Parathyroid Dis*, 1(1):13-16.
13. Chockalingam A (2008). World Hypertension Day and global awareness. *Can J Cardiol*, 24(6):441-4.
14. Spasovski D (2013). Renal markers for assessment of renal tubular and glomerular dysfunction. *J Nephropharmacol*, 2(2):23-25.
15. Baradaran A (2014). Primary hyperparathyroidism and kidney; recent findings. *J Parathyroid Dis*, 2(1):5-6.
16. Ardalan MR, Nasri H(2013). Acute kidney injury; the focus of world kidney day in 2013. *J Nephropharmacol*, 2(2):15-16.
17. Campbell NR, Chen G (2010). Canadian efforts to prevent and control hypertension. *Can J Cardiol*, 26 Suppl C: 14C-7C.
18. Nayer A, Ortega LM (2014). Catastrophic antiphospholipid syndrome: a clinical review. *J Nephropathol*, 3(1):9-17.
19. Gaziano TA, Bitton A, Anand S, Weinstein MC (2009). The global cost of nonoptimal blood pressure. *J Hypertens*, 27:1472-77.
20. Hajivandi A, Amiri M (2013). World diabetes day: diabetes mellitus and nephrology. *J Nephropharmacol*, 2(2):31-32.
21. Nasri H (2014). The awareness of chronic kidney disease and aging; the focus of world kidney day in 2014. *J Nephropharmacol*, 3(1):1-2.
22. Mowlaie M, Nasri H (2014). Close association of arterial plaques with left ventricular hypertrophy and ejection fraction in hemodialysis patients. *J Nephropharmacol*, 3(1):9-12.
23. Ardalan MR, Sanadgol H, Nasri H, Baradaran A, Tamadon MR, Rafeian-Kopaei R (2014). Vitamin D therapy in diabetic kidney disease; current knowledge on a public health problem. *J Parathyroid Dis*, 2(1):15-17.