Volume 3, Issue 1, January 2025 ISSN (E): 2938-3765

THE ROLE OF A PATRONAGE NURSE IN THE EARLY DETECTION OF LEADING NON-COMMUNICABLE DISEASES INCLUDED IN THE MEDICAL INSURANCE PACKAGE

I. R. Urazalieva
M. A. Rakhmatullaeva
Tashkent Medical Academy School of Public Health

Abstract
Hypertension (high blood pressure) is one of the cardiovascular diseases, and its early detection and management play a critical role in healthcare. Hypertension is associated with numerous physical and social factors, and its prevention is possible through early diagnosis and continuous monitoring. In patients covered by medical insurance packages, the role of a patronage nurse is significant in consistently monitoring blood pressure, providing patients with qualified advice, and improving treatment effectiveness. Research highlights the necessity of a comprehensive approach to combating hypertension and emphasizes the importance of its early detection for public health.

Keywords: Hypertension, cardiovascular diseases, health, blood pressure, therapy, patient, doctor, high blood pressure, hospital.

Introduction

Cardiovascular diseases (CVD) are the leading cause of death worldwide, making their prevention a top priority in healthcare [1, 2].

Hypertension is one of the primary risk factors for CVD. In recent years, significant progress has been made in its treatment; however, the high number of hospitalizations continues to result in substantial socio-economic costs [3]. Globally, hypertension affects 22% of people aged 18 and older [4]. In Brazil, data from the 2018 telephone survey on the monitoring of risk and protective factors for chronic diseases (Vigitel) revealed that 24.7% of adults reported having a medical diagnosis of hypertension, with its prevalence increasing with age, in both genders, and among the less-educated population [5].

Due to its widespread prevalence and potential harm to the population, hypertension poses a significant public health challenge. From this perspective, research focused on hypertension aimed at strengthening preventive and control measures, as outlined in local government health policies, is critical. This condition is often referred to as a “silent threat” because it typically does not present warning signs or symptoms until severe complications arise [3].

Clinical, experimental, and pathological studies indicate that hypertension is a major contributing factor to cardiovascular disease, sudden cardiac death, stroke, congestive heart failure, and renal

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

failure. The detrimental effects of elevated blood pressure on the cardiovascular system are largely attributed to the mechanical stress imposed on the heart and blood vessels [6].

Humoral factors and vasoactive hormones, such as angiotensin, catecholamines, and prostaglandins, may play a role in the pathogenesis of hypertensive cardiovascular diseases [7]. Hypertension, along with increased tangential stress on the myocardium and arterial walls, leads to the development of hypertensive heart disease and congestive heart failure. Furthermore, it contributes to hypertensive vascular diseases that affect not only the kidneys but also the heart and brain [8].

Cardiovascular diseases (CVD) are the most common chronic diseases and include 11 main subcategories such as rheumatic heart disease, ischemic heart disease, stroke, and hypertensive heart disease. These diseases are a leading cause of death and disability worldwide [9]. According to the World Health Organization (WHO), approximately 17.9 million people die each year from cardiovascular diseases, accounting for one-third of global deaths [10,11]. More than two-thirds of deaths from CVD occur in low- and middle-income countries (LMICs), and the rate continues to rise over the decades [10,11]. The increasing prevalence of CVD and non-communicable diseases (NCDs) can have severe and lasting economic impacts on individuals and their families, particularly in resource-limited settings [12]. Many individuals suffering from CVD often face long-term healthcare costs, which can push families into poverty and lead to catastrophic healthcare expenses. Despite significant progress in preventing and controlling CVD, it continues to impose a significant health and economic burden on individuals, healthcare systems, and societies [10].

Cardiovascular diseases (CVD) are the leading cause of death globally, and the prevalence of CVD is steadily increasing in both developed and developing countries [13]. According to the World Health Organization report, approximately 17.9 million people died from heart disease and stroke in 2016, accounting for 31% of global deaths, with an estimated 23.6 million people expected to die from CVD by 2030 [14]. In line with global trends, economic and social changes have significantly impacted the lifestyle of Koreans; currently, cardiovascular diseases are one of the leading causes of death in Korea, accounting for one in five deaths [15]. Therefore, interventions aimed at preventing and reducing cardiovascular risk factors are essential.

Epidemiological evidence indicates that CVD is associated with age, gender, ethnicity, behavioral risk factors (such as smoking, alcohol consumption, and low physical activity), and various chronic metabolic disorders. Among these, hypertension (HTN), dyslipidemia (DL), and type 2 diabetes mellitus (DM) are the most common modifiable risk factors for CVD. HTN, DM, and DL are recognized as leading causes of mortality and morbidity in populations [16]. Approximately two-thirds of all adults with HTN aged 30 and above face a ~40% higher risk of cardiovascular events. Systematic reviews demonstrate that lowering blood pressure significantly reduces major cardiovascular events and all-cause mortality [17].

Patients with DM have a 10% higher risk of coronary artery disease (CAD), a 53% higher risk of myocardial infarction (MI), and a 58% higher risk of stroke compared to those without DM. Moreover, CVD accounts for nearly half of all deaths among patients with DM, primarily due to stroke and MI [18]. The INTERHEART study revealed that DL contributed to 49% of the

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

population-attributable risk for a first MI, and DL prevalence among CVD patients in Asia ranged between 83% and 87% [19].

Various biochemical mechanisms independently elevate CVD risk in individuals with these chronic metabolic disorders. Lipid oxidation is a critical determinant of atherosclerosis, which leads to CVD. Additionally, elevated low-density lipoprotein (LDL) and reduced high-density lipoprotein (HDL) levels in DL are linked to MI and stroke [20]. Endothelial dysfunction, vascular inflammation, arterial remodeling, atherosclerosis, dyslipidemia, and obesity are common risk factors for CVD in HTN and DM. Furthermore, the upregulation of the renin-angiotensin-aldosterone system, oxidative stress, inflammation, and immune activation contribute to the close relationship between DM, HTN, and CVD [21].

However, limited evidence exists on the precise relationship between chronic metabolic disorders and cardiovascular diseases. Despite maintaining optimal levels of metabolic indices such as blood pressure, glucose, or lipids, individuals with HTN, DM, and DL continue to experience a high prevalence of CVD. Evidence suggests that while hyperglycemia contributes to ischemic events, it is not the sole factor, as prediabetic and normoglycemic patients also show increased risk for various types of CVD [22].

CONCLUSION

In conclusion, this review highlights the significant public health burden posed by hypertension and its critical role in the development of cardiovascular diseases. Despite advancements in treatment, the prevalence of hypertension remains high globally, emphasizing the need for robust preventive and control strategies.

While the article effectively outlines the pathophysiological mechanisms linking hypertension, diabetes, and dyslipidemia to CVD, further research is crucial to fully understand the complex interplay between these chronic metabolic disorders and their impact on cardiovascular outcomes. Key areas for future investigation include:

Identifying novel biomarkers that can accurately predict individual CVD risk in patients with these metabolic conditions.

Developing personalized treatment strategies that address the unique risk profiles of each patient.

Improving access to affordable and effective preventive and treatment interventions for individuals in low- and middle-income countries.

By addressing these critical areas, we can effectively combat the rising tide of cardiovascular diseases and improve the quality of life and longevity of individuals worldwide.

REFERENCES:

1. Roth GA, Mensah GA, Johnson CO, Addolorato G, Ammirati E, Baddour LM, et al. GBD-NHLBI-JACC Global burden of cardiovascular diseases writing group. Global burden of cardiovascular diseases and risk factors, 1990–2019: Update From the GBD 2019 Study. J Am Coll Cardiol. 2020;76(25):2982–3021. doi: 10.1016/j.jacc.2020.11.010.

2. Virani SS, Alonso A, Aparicio HJ, Benjamin EJ, Bittencourt MS, Callaway CW, et al; American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

Statistics Subcommittee. Heart disease and stroke statistics-2021 update: a report from the American Heart Association. Circulation. 2021;143(8):e254-e743

3. Malachias MVB, Souza WKSB, Plavnik FL, Rodrigues CIS, Brandão AA, Neves MFT, et al. 7th Brazilian Arterial Hypertension Guidelines. Arq Bras Cardiol. 2016;107(3):1–83.

4. World Health Organization (WHO) Noncommunicable diseases country profiles 2018. Geneva: World Health Organization; 2018. [2019 Dec 09].

5. *Ministério da Saúde (BR) Secretaria de Vigilância em Saúde. Departamento de Vigilância de Doenças e Agravos não Transmissíveis e Promoção da Saúde . Vigitel Brasil 2018: vigilância de fatores de risco e proteção para doenças crônicas por inquérito telefônico. Brasília: Ministério da Saúde; 2019. [2019 Dec 09].*

6. Hollander W. Role of hypertension in atherosclerosis and cardiovascular disease. Am J Cardiol. 1976;38(6):786–800.

7. Mancia G, Fagard R, Narkiewicz K, Redón J, Zanchetti A, Böhm M, Christiaens T, Cifkova R, De Backer G, Dominiczak A, Galderisi M, Grobbee DE, Jaarsma T, Kirchhof P, Kjeldsen SE, Laurent S, Manolis AJ, Nilsson PM, Ruilope LM, Schmieder RE, Sirnes PA, Sleight P, Viigimaa M, Waeber B, Zannad F, Members TF. ESH/ESC Guidelines for the management of arterial hypertension: the Task Force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC) J Hypertens. 2013;2013(31):1281–1357.

8. Williams B, Mancia G, Spiering W, Agabiti Rosei E, Azizi M, Burnier M, Clement DL, Coca A, de Simone G, Dominiczak A, Kahan T, Mahfoud F, Redon J, Ruilope L, Zanchetti A, Kerins M, Kjeldsen SE, Kreutz R, Laurent S, Lip GYH, McManus R, Narkiewicz K, Ruschitzka F, Schmieder RE, Shlyakhto E, Tsioufis C, Aboyans V, Desormais I, Authors/Task Force Members 2018 ESC/ESH Guidelines for the management of arterial hypertension: The Task Force for the management of arterial hypertension of the European Society of Cardiology and the European Society of Hypertension: The Task Force for the management of arterial hypertension of the European Society of Cardiology and the European Society of Hypertension. J Hypertens. 2018;36(10):1953–2041

9. Vos T, Lim SS, Abbafati C, et al. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the global burden of Disease Study 2019. The Lancet. 2020;396(10258):1204–22.

10. Roth GA, Mensah GA, Johnson CO, et al. Global Burden of Cardiovascular Diseases and Risk factors, 1990–2019: Update from the GBD 2019 study. J Am Coll Cardiol. 2020;76(25):2982–3021.

11. Joseph P, Leong D, McKee M, et al. Reducing the Global Burden of Cardiovascular Disease, Part 1: the epidemiology and risk factors. Circ Res. 2017;121(6):677–94.

12. Jan S, Laba TL, Essue BM, et al. Action to address the household economic burden of non-communicable diseases. Lancet. 2018;391(10134):2047–58.

13. Rizvi S, Kamran H, Salciccioli L, Saiful F, Lafferty J, Lazar JM. Relation of the ankle brachial index to left ventricular ejection fraction. Am J Cardiol. 2010;105:129–132.

14. Rhee EJ. Prevalence and current management of cardiovascular risk factors in Korean adults based on fact sheets. Endocrinol Metab (Seoul) 2020;35:85–94.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

15. Shin H-Y, Lee J-Y, Song J, Lee S, Lee J, Lim B, Kim H, Huh S. Cause-of-death statistics in the Republic of Korea, 2014. J Korean Med Assoc. 2016;59:221–232.
16. Hedayatnia M, Asadi Z, Zare-Feyzabadi R, Yaghooti-Khorasani M, Ghazizadeh H, Ghaffarian-Zirak R, Nosrati-Tirkani A, Mohammadi-Bajgiran M, Rohban M, Sadabadi F, et al. Dyslipidemia and cardiovascular disease risk among the MASHAD study population. Lipids Health Dis. 2020;19:42.
17. Ettehad D, Emdin CA, Kiran A, Anderson SG, Callender T, Emberson J, Chalmers J, Rodgers A, Rahimi K. Blood pressure lowering for prevention of cardiovascular disease and death: a systematic review and meta-analysis. Lancet. 2016;387:957–967.
18. Einarson TR, Acs A, Ludwig C, Panton UH. Prevalence of cardiovascular disease in type 2 diabetes: a systematic literature review of scientific evidence from across the world in 2007–2017. Cardiovasc Diabetol. 2018;17:83.
19. Darroudi S, Saberi-Karimian M, Tayefi M, Arekhi S, Motamedzadeh Torghabeh A, Seyedzadeh Sani SMR, Moohebati M, Heidari-Bakavoli A, Ebrahimi M, Azarpajouh MR, et al. Prevalence of combined and noncombined dyslipidemia in an Iranian population. J Clin Lab Anal. 2018;32:e22579.
20. Borén J, Chapman MJ, Krauss RM, Packard CJ, Bentzon JF, Binder CJ, Daemen MJ, Demer LL, Hegele RA, Nicholls SJ, et al. Low-density lipoproteins cause atherosclerotic cardiovascular disease: pathophysiological, genetic, and therapeutic insights: a consensus statement from the European Atherosclerosis Society Consensus Panel. Eur Heart J. 2020;41:2313–2330.
21. Libby P, Ridker Paul M, Maseri A. Inflammation and atherosclerosis. Circulation. 2002;105:1135–1143.
22. Thrainsdottir IS, Aspelund T, Thorgeirsson G, Gudnason V, Hardarson T, Malmberg K, Sigurdsson G, Rydén L. The association between glucose abnormalities and heart failure in the population-based Reykjavík Study. Diabetes Care. 2005;28:612.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5