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Hypertension a Cause and Concern for Various Cardiovascular Diseases in Male and Female Population

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Abstract
Hypertension is the leading cause for the onset of many cardiovascular diseases and a predominant health care burden in Arab countries. Increased prevalence of hypertension is observed in obese teens, and adult population increases the risk for many cardiovascular diseases, renal functional derangement, and cerebral stroke. The present study aims to find out the prevalence of hypertension among male and female populations in the Wadi Aldawasir region of Saudi Arabia. Data were collected from the medical record for the patient visiting Wadi Aldawasir general hospital during the period of 2014-2018. Off the total of 347 male and female populations, 234 were diagnosed with hypertension that accounts for 67 percentages. Among, 347 total patients, 137 were female, and 97 were male. The result of the study showed that the prevalence of hypertension was higher among both male and female adult. However, the incidence of hypertension was more in female compared to male. Considering the observed prevalence of hypertension in both male and female population and because of the subsequent outcomes of hypertension on the cardiovascular functioning, therapeutic intervention, and effective community-based health care programs in educating the people about the risk factors of hypertension is required in this region of Saudi Arabia.

Keywords: Cardiovascular Disease, Hypertension Female, Male, Medical Record

Introduction

Cardiovascular disease comprises of diseases of blood vessels, and heart wherein death occurs due to narrowed, obstructed or hardened blood vessels of the heart such that the tissue doesn't receive enough nutrients and oxygen to carry out the normal function. [1] Cardiovascular disease is difficult to be diagnosed until the underlying condition worsens to the point of myocardial infarction, stroke and sudden cardiac death. [1] Numerous studies have shown that increased prevalence of diabetes mellitus, obesity, and hypercholesterolemia as the major risk factor for cardiovascular diseases.[2, 3] This dramatic rises in the occurrence of cardiovascular diseases to an alarming rate in the last two decades poses a major public health problem.[4] According to health statistics, 28–30% of total deaths in the Arab countries were due to cardiovascular diseases such as myocardial infarction, coronary artery disease, stroke, and peripheral arterial disease.[5, 6, 7.] The cardiovascular disease-related mortality rate can be reduced by decreasing known risk factors. Among the various risk factor like obesity, dyslipidemia, and diabetes mellitus,[2] hypertension is emerged out to be a globally well-established and important risk factor for cardiovascular morbidity and mortality. Studies have shown that hypertension is considered to be the strongest risk factor for various cardiovascular events such as myocardial infarction, heart failure, peripheral

arterial disease, stroke, and renal failure. [8-10] Stroke mortality because of hypertension is by far the most important risk factor for fatal cerebral stroke. A close relationship between the prevalence of hypertension and fatal stroke has been reported.[11]

Although significant progress has been made in increasing the awareness, improvement in the treatment and control of hypertension, the statistic remains high regarding the prevalence of hypertension.[12] The situation needs to be addressed frequently or on a timely bases. And looking on to the fast-changing sedentary lifestyle, obesity and eating fast food rich in salt and sugar, there is a greater chance of an increase in the rate of prevalence of hypertension. Not addressing the prevalence of hypertension, the risk of various cardiovascular diseases like coronary artery disease, left ventricular hypertrophy including cerebral stroke and renal failure increases greatly. Studies have suggested that deaths from stroke in the Middle East will nearly double by 2030.[13] and by 2020 mortality from ischemic heart disease in developing countries is expected to increase by 120% for women and 137% for men.[14] And this could be attributed to the fast increasing rate of hypertensive individuals. This increased prevalence rate of hypertension would be attributed to adaptation to sedentary lifestyle, obesity, and consumption of fast food rich in salt and sugar. Hence present study aims to evaluate the prevalence of hypertension among male and female population in this region of Saudi Arabia. In order to avoid false hypertension diagnosis through any error in the measurement, we purpose to evaluate the prevalence rate of hypertension through the patient clinical data from hospital medical record.

Methods

Data to investigate was collected from both male and female patients visiting the ward of Wadi Ad Dawasir general hospital between the years 2014 to 2018. The survey is a systematic random sample of patient visit based on hospital record. Ethical approval is obtained to carry out the research. A total of 347 patient's medical record data was assessed.

Results

Of the total 374 patients, 167 were female patients, and 180 were male patients. Among female 137 outs of 167 were diagnosed with hypertension which accounts for 80 percent and among male a total of 180 patient medical records was analyzed, of which 97 patients were hypertensive individuals, which accounts for 53 percent. Off the total of 347 male and female populations, 234 were diagnosed with hypertension that accounts for 67 percentages. Among, 347 total patients, 137 were female, and 97 were male. (Table-1 and Figure-1). The result of the study showed that the prevalence of hypertension was higher among both male and female population. However, the incidence of hypertension was more in female compared to male population.

Table1: Prevalent of hypertension among male and female patients visiting the Wadi Aldawasir General Hospital during the year 2014 to 2018

Cardiovascular risk factor	Female	Male
Total of number of Patients	167	180
Hypertensive	137	97

Figure 1: Prevalent of hypertension among male and female patients visiting the Wadi Aldawasir General Hospital during the year 2014 to 2018

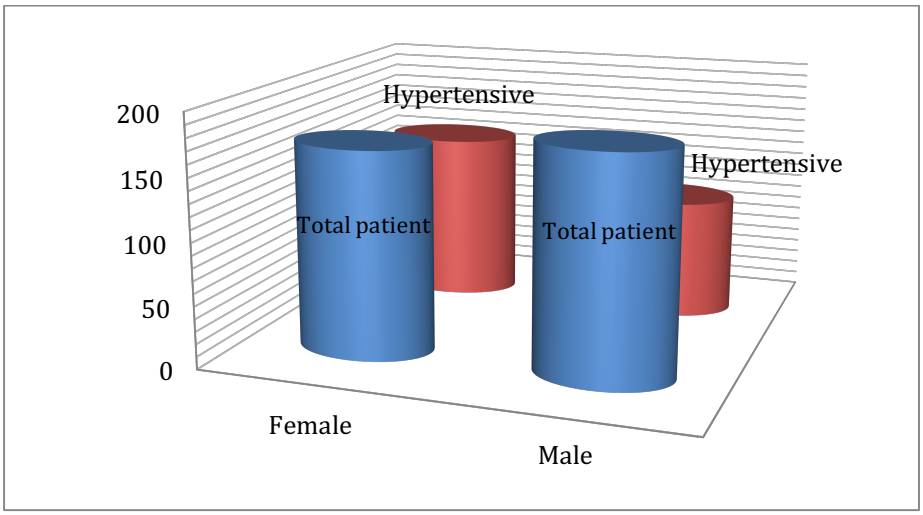
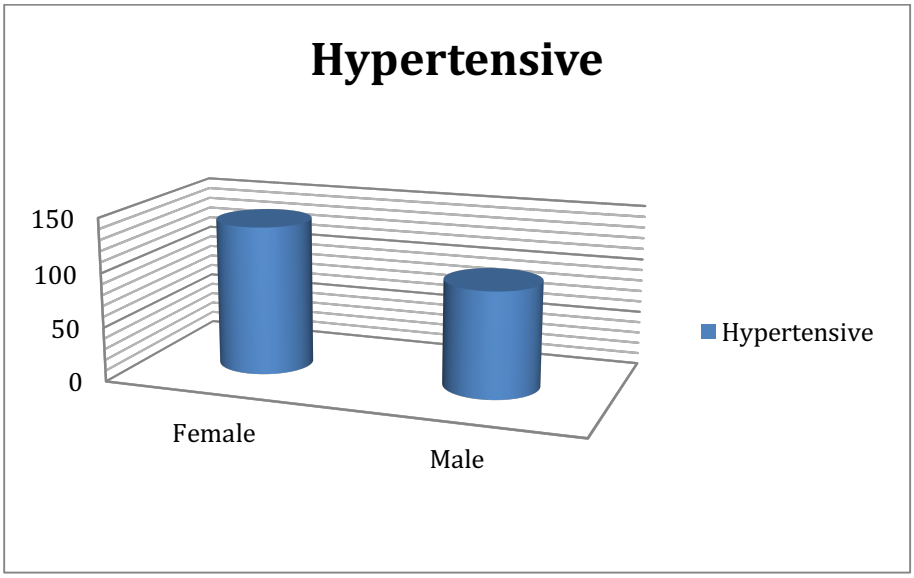


Figure 2: Comparison of the prevalence of hypertension among male and female patients



Discussion:

Increased prevalence of hypertension is reported mainly in developing countries and is the predominant cause for the onset of many cardiovascular diseases. Hypertension was classified as the leading risk factor for cardiovascular-related deaths in Saudi Arabia.[15] Hypertension leads to left ventricular hypertrophy, myocardial infarction 16, coronary artery disease, [17] atherosclerosis, [18] chronic kidneys disease[19] cerebrovascular diseases [20], and [21] peripheral vascular diseases .[22]

Recent cross-sectional studies have explained about the increasing prevalence of hypertension in different parts of the Kingdom of Saudi Arabia.[23] Although numerous studies have shown the prevalence of hypertension and its risk factor in Saudi Arabia The highest prevalence of hypertension in Saudi Arabia has been reported from the Al-Qasim and Aseer region.[15,23]

Unlike other studies, our study presently includes survey through hospital-based data from the medical record on the prevalence of hypertension among male and female patients visiting the Wadi Al Dawasir general hospital in a period of four years from 2013 to 2018. Further, the prevalence of hypertension in this part of Saudi Arabia has not been studied earlier. We reported that there was an increased percentage of both male and female diagnosed with hypertension. Furthermore, the percentage of women suffering from hypertension is more compared to men. The increasing prevalence of hypertension could possibly make people susceptible to cardiovascular diseases. Coronary disease in male and stroke in the female are the major first cardiovascular events noted after hypertension onset, as observed from data of Framingham Heart Study.[24] Despite a vast development in the management of prevention, treatment, and control of high blood pressure, hypertension remains a major public health problem.

Hypertension remained a leading risk factor for death in the Kingdom of Saudi Arabia and accounted for about 24% of total deaths from cardiovascular and circulatory diseases. Twenty-five maintaining blood pressure below the hypertensive or prehypertensive levels will prevent the risk of cardiovascular disease during a lifetime. Patients who remained healthy had significantly lower blood pressure (121/79 versus 134/83 mmHg) compared to the patients who have cardiovascular diseases with an increase in the blood pressure compared to the healthy individual.[26]

Unhealthy diet, physical inactivity, and obesity are some of the important responsible factors as suggested by experts.[6, 27] Further it is reported that one of the anthropometric parameters strongly related to hypertension is obesity in Saudi adult population that is measured in terms of waist circumference.[28] Waist circumference stands as a risk factor for hypertension. Reports have suggested that the percentage of obesity among the adult population in Saudi has tremendously increased. Obesity and hypertension greatly increase the mortality rate due to cardiovascular and kidney disease.[29]The percentage of obesity is more in female than the opposite sex.[30] Studies have suggested that obesity is one of the causes of chronic diseases like high blood pressure.[31]Increased prevalence of hypertension in women than men could be related to the increasing obesity rate in women and increase hypertension percentage in female than male in our study. We propose that obesity could be one of the causes of an increased rate of hypertension in the female.

Hypertension remains asymptomatic for years before letting the person into cardiovascular and cerebral complication hence commonly mentioned to as a "silent killer".[32] Hypertension is one of the most common conditions that require lifelong treatment, and there is ample evidence that such treatment substantially reduces the risk of cerebrovascular accidents and coronary artery disease [33-36]. Thus it is important to measure blood pressure in a regular manner, using a home blood pressure monitoring device. This will be a great way of Preventing and treating hypertension. Eating healthy food and limiting salt intake, smoke quitting, exercising regularly and maintain a normal (BMI) body mass index, are some of the risk factors for hypertension should be brought into notice to the people in order to prevent the increasing prevalence of hypertension. It is well recognized that effective management of hypertension reduces the occurrence of myocardial infarction, stroke and vascular complications[32,17] Antihypertensive drugs should be considered to prevent cardiovascular hazards if the successive blood pressure recordings are above the hypertensive levels. Antihypertensive therapy and improved lifestyle have brought a dramatic reduction in these cardiovascular events. A recent study provides evidence-based intervention on the prevalence of hypertension among the adult population. This study helps to further strengthen the strategies by the health care sector in reducing the incidence of hypertension and cardiovascular diseases in the female and male adult population. Sustained and coordinated action will be required to prevent disease. The main strategy that involves overcoming this problem is community-based prevention and health care programs about the risk factors. The community-based approach will be fruitfull through joint collaborative efforts between health providers and the community. [37]

Conclusion

Thus, it concluded that hypertension is the most prevalent risk factor reported among adult men and women. As known from the earlier studies the onset of hypertension is the risk factor for various cardiovascular diseases like stroke, myocardial infarction and left ventricular hypertrophy. There is an urgent need for awareness among the adult population about the increased prevalence of hypertension and its complication on the cardiovascular

system. Healthy lifestyle such as weight monitoring, less sugar and salt diet food, exercise and cessation of smoking are some of the preventive measure needed to decrease the prevalence of hypertension among adult.

References

1. Kumosani, Taha Abdullah, Mohamed Nabil Alama, and Archana Iyer. "Cardiovascular diseases in Saudi Arabia." *Prime Res Med* 1 (2011): 1-6.
2. Steyn, Krisela, and Albertino Damasceno. "Lifestyle and related risk factors for chronic diseases." *Disease and mortality in sub-Saharan Africa* 2 (2006): 247-65.
3. Al Alwan, Ibrahim, et al. "Prevalence of Self-reported Cardiovascular Risk Factors among Saudi Physicians: A Comparative Study." *International journal of health sciences* 7.1 (2013)
4. Khatib, O. "Noncommunicable diseases: risk factors and regional strategies for prevention and care." (2004).
5. Executive Board of Health Ministers Council for GCC states, "Health Indicators for the Cooperation states No. 14," Riyadh, Saudi Arabia, 2008.
6. Abdulrahman O. Musaiger, Hamed R. Takruri, Abdelmonem S. Hassan, and Hamza Abu-Tarboush, "Food-Based Dietary Guidelines for the Arab Gulf Countries," Journal of Nutrition and Metabolism, vol. 2012, Article ID 905303, 10 pages, 2012. doi:10.1155/2012/905303.
7. Musaiger, Abdulrahman O. "Diet and prevention of coronary heart disease in the Arab Middle East countries." *Medical principles and practice* 11. Suppl. 2 (2002): 9-16.
8. S. Lewington, R. Clarke, N. Qizilbash, R. Peto, R. Collins, Age-specific relevanceof usual blood pressure to vascular mortality: a meta-analysis of individualdata for one million adults in 61 prospective studies, Lancet 360 (2002)1903–1913.[4]
9. K.A. Britton, J.M. Gaziano, L. Djousse, Normal systolic blood pressure and riskof heart failure in US male physicians, Eur. J. Heart Fail. 11 (2009) 1129–1134.[5]
10. R.G. Kalaitzidis, G.L. Bakris, Prehypertension: is it relevant for nephrologists, Kidney Int. 77 (2010) 194–200.
11. K. Wolf-Maier, R.S. Cooper, J.R. Banegas, S. Giampaoli, H.W. Hense, M. Joffres, M. Kastarinen, N. Poulter, P. Primatesta, F. Rodriguez-Artalejo, B. Stegmayr, M.Thamm, J. Tuomilehto, D. Vanuzzo, F. Vescio, Hypertension prevalence andblood pressure levels in 6 European countries, Canada, and the United States, JAMA 289 (2003) 2363–2369.
12. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(12)61310-5/fulltext .preventing hypertension: a hopeless dream?-The Lancet
13. Tran, Jackie, Masoud Mirzaei, and Stephen Leeder. "Hypertension: its prevalence and population-attributable fraction for mortality from stroke in the Middle East and north Africa." *Circulation*. Vol. 122. No. 2. 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA: LIPPINCOTT WILLIAMS & WILKINS, 2010.
14. Yach, Derek, et al. "The global burden of chronic diseases: overcoming impediments to prevention and control." *Jama*291.21 (2004): 2616-2622.
15. Aldiab, A., Shubair, M. M., Al-Zahrani, J. M., Aldossari, K. K., Al-Ghamdi, S., Househ, M., & Jradi, H. (2018). Prevalence of hypertension and prehypertension and its associated cardioembolic risk factors; a population based cross-sectional study in Alkharj, Saudi Arabia. *BMC public health*, *18*(1), 1327.
16. A. M. Richards, M. G. Nicholls, R. W. Troughton et al., "Antecedent hypertension and heart failure after myocardial infarction," Journal of the American College of Cardiology, vol. 39, no. 7, pp. 1182–1188, 2002.
17. D. Levy, P. W. F. Wilson, K. M. Anderson, and W. P. Castelli, "Stratifying the patient at risk from coronary disease: new insights from the Framingham Heart Study," American Heart Journal, vol. 119, no. 3, part 2, pp. 712–717, 1990.
18. V. J. Dzau, "Atherosclerosis and hypertension: mechanisms and interrelationships," Journal of Cardiovascular Pharmacology, vol. 15, supplement 5, pp. S59–S64, 1990.
19. 19)M. Adamczak, M. Zeier, R. Dikow, and E. Ritz, "Kidney and hypertension," Kidney International, Supplement, vol. 61, no. 80, pp. S62–S67, 2002.
20. S. Lewington, R. Clarke, N. Qizilbash, R. Peto, and R. Collins, "Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies," Lancet, vol. 360, no. 9349, pp. 1903–1913, 2002, Erratum in: Lancet, vol. 361, no. 9362, p. 106, 2003.
21. K. Miura, M. L. Daviglus, A. R. Dyer et al., "Relationship of blood pressure to 25-year mortality due to coronary heart disease, cardiovascular diseases, and all causes in young adult men: the chicago heart association detection project in industry," Archives of Internal Medicine, vol. 161, no. 12, pp. 1501–1508, 2001.

22. J. M. Murabito, R. B. D'Agostino, H. Silbershatz, and P. W. F. Wilson, "Intermittent claudication: a risk profile from the Framingham Heart Study," Circulation, vol. 96, no. 1, pp. 44–49, 1997.
23. Al-Homrany, M. A., Khan, M. Y., Al-Khaldi, Y. M., Al-Gelban, K. S., & Al-Amri, H. S. (2008). Hypertension care at primary health care centers: a report from Abha, Saudi Arabia. *Saudi Journal of Kidney Diseases and Transplantation*, *19*(6), 990.
24. Lloyd-Jones, D. M., Leip, E. P., Larson, M. G., Vasan, R. S., & Levy, D. (2005). Novel approach to examining first cardiovascular events after hypertension onset. *Hypertension*, *45*(1), 39-45.
25. Institute for Health Metrics and Evaluation (IHME), Stacked bar chart, Saudi Arabia. Deaths.1990–2010 [Internet], IHME, University of Washington, Seattle, Wash, USA, 2013, http://viz.healthmetricsandevaluation.org/gbd-compare/.
26. Khakwani, Sehrish, Hira Bushra, and Salman Yousaf. "Major Risk for cardiovascular Diseases-Hypertension." *PAKISTAN JOURNAL OF MEDICAL & HEALTH SCIENCES* 11.3 (2017): 1133-1134.
27. A. Mehio Sibai, L. Nasreddine, A. H. Mokdad, N. Adra, M. Tabet, and N. Hwalla, "Nutrition transition and cardiovascular disease risk factors in Middle East and North Africa countries: reviewing the evidence," *Annals of Nutrition and Metabolism*, vol. 57, no. 3-4, pp. 193–203, 2010.
28. Rouf, Abdul, et al. "Prevalence of Hypertension and its Association with Waist Circumference in Adult Population of Block Hazratbal, Srinagar, India." *Annals of Medical and Health Sciences Research* (2018).
29. DeMarco VG, Aroor AR, Sowers JR. The pathophysiology of hypertension in patients with obesity. *Nature reviews Endocrinology*. 2014;10(6):364-376. doi:10.1038/nrendo.2014.44.
30. SS, M. Alqarni. "A review of prevalence of obesity in Saudi Arabia." *J Obes Eat Disord* 2.2 (2016).
31. http://saudigazette.com.sa/article/522724/SAUDI-ARABIA/Obesity-rate-jumps-34-among-Saudi-women-in-3-years
32. http://www.healthdata.org/sites/default/files/files/Projects/KSA/Hypertension-At-a-Glance.pdf.
33. MacMahon S, Stamler J, Peto R, Cutler J, Collins R, Sørlie P, Neaton J, Abbott R, Godwin J, Dyer A: Blood pressure, stroke, and coronary heart disease. Part 1. Prolonged differences in blood pressure: prospective observational studies corrected for the regression dilution bias. Lancet 1990;335:765– 774. 4
34. World Health Organization: Arterial hypertension. Report of a WHO expert committee. World Health Organ Tech Rep Ser 1978;628: 7–56.
35. Yamani M, Massie B: Hypertension, myocardial ischemia and sudden death. Curr Opin Cardiol 1994;9:542–550.
36. Petrovitch H, Curb J, Bloom-Marcus E: Isolated systolic hypertension and risk of stroke in Japanese-American men. Stroke 1995;26: 25–29.
37. WHO/EMRO, "Non-communicable Diseases: Challenge and Strategic Direction," Regional Office of Eastern Mediterranean, Cairo, 2005.