ISSN 2348-0319 International Journal of Innovative and Applied Research [2023]
(Volume 11, Issue 09)
28-33

Journal home page: http://www.journalijiar.com

INTERNATIONAL JOURNAL
OF INNOVATIVE AND APPLIED RESEARCH

REVIEW ARTICLE

Article DOI: 10.58538/IJIAR/2044
DOI URL: *http://dx.doi.org/10.58538/IJIAR/2044*

HYPERTENSION: A REVIEW OF PREVALENCEANDASSOCIATEDFACTORS

[*]Emmanuel Ifeanyi Obeagu[1] and Getrude Uzoma Obeagu[2]

1. Department of Medical Laboratory Science, Kampala International University, Uganda.
2. School of Nursing Science, Kampala International University, Uganda.

Manuscript Info

Manuscript History
Received: 10 August 2023
Final Accepted: 18 September 2023
Published: September 2023

Keywords:
Prevalence, Associated factors, Hypertension

Abstract

Hypertension means high pressure in the arteries; it is commonly known as high blood pressure. Blood pressure from 120/80 mmHg to 139/89 mmHg is called pre-hypertension, blood pressure greater than or equal to 140/90 mmHg is considered high. Elevated systolic and/or diastolic blood pressure increases the risk of developing heart disease, kidney disease, hardening of the arteries, eye damage and stroke. These complications of hypertension are often called target organ damage, because damage to these organs is the end result of chronic high blood pressure. Most people with hypertension do not have any symptoms in the early stages, symptoms only appear after target organs are damaged. These symptoms are usually due to target organ damage and their manifestations depend on the affected organ. For this reason, regular screening of people with symptoms is essential for early diagnosis, treatment, and control of high blood pressure. Early diagnosis, treatment, and optimal control of hypertension are essential to reduce morbidity and mortality from hypertension-related diseases. A family history of hypertension shows that people with high blood pressure are nearly 6 times more likely to have high blood pressure than people with high blood pressure. People without the disease and those with high income levels are three times more likely to have high blood pressure. The greater the body mass, the more blood is needed to supply oxygen and nutrients to muscles and other tissues. Salt consumption and hypertension Sodium and salt intake remains controversial as a risk factor for hypertension, although it is true that some people are particularly sensitive to sodium. Physical activity and hypertension Inactive adolescents are more likely to have high blood pressure. Excessive consumption of saturated fatty acids and trans fatty acids is a risk factor for cardiovascular diseases, including hypertension.

***Corresponding Author:-** **Emmanuel Ifeanyi Obeagu,** *Department of Medical Laboratory Science, Kampala International University, Uganda.*

Introduction:-

Between 1990 and 2010, hypertension (HTN) was the leading cause of death and disability globally [1]. During this period, the prevalence of HTN in SSA increased by 67% and it was responsible formore than 500,000 deaths which is at variance with many other countries worldwide where absolute BPlevelsmaybedecreasing [1].

A recentreviewshowed that hypertensionprevalencevariesbetween15% and 70% with30% averageamong SSA countries. Furthermore, between 44% and 93% of people with HTN in SSA are unaware of theirhypertensive status [2-4]. Therefore, the extent of adverse effects of HTN on health and livesof populations within Uganda and SSA remains largely unexplored with 42% cases of ischemic heart diseaserelated to hypertension and increases the risk of stroke by at least five folds and 1/3 of heart failure cases inSSAaredueto HTN[5-7].

HTN once rare in traditional African societies [8] hasbecome a major public health problem because of high prevalence rates contrasting with low awareness,treatmentand control rates [8-10]

OverviewofHypertension

Hypertension means high pressure in the arteries; it is commonly known as high blood pressure [11-14].Blood pressureisdescribedbytwovalues,pressureduringsystole (top value) andpressureduring diastole (bottom value). Normal blood pressure is between 90/60 mmHg and 120/80 mmHg bloodpressure between 120/80 mmHg and 139/89 mmHg is called pre- hypertension, and a that 140/90 mmHg orabove is considered high. .An elevation of the systolic and/or diastolic blood pressure increases the risk ofdevelopingheartdisease,kidneydisease,hardeningofthearteries,eyedamage,andstroke.Thesecomplications of hypertension are often referred to as end-organ damage because damage to these organs istheend result ofchronichigh blood pressure [15-16].

Most of the time hypertensive people show no symptoms in the early stages, symptoms only manifest afterend-organ damage [8]. That is why hypertension is described by some clinicians as a‘silent killer’. Symptoms that may occur include chest pain, confusion, ear buzzing, irregular heartbeat,nosebleed, tiredness, and headache and vision changes. These symptoms are usually a result of end-organdamage and the presentation depends on the organ that is affected. For this reason, the routine screening ofsymptomatic individuals is critical in early diagnosis, treatment and control of high blood pressure. Earlydiagnosis, treatment and optimum control of hypertension are keys to reducing morbidity and mortality ofhypertensionrelatedillnesses [17-18].

Although the list of causes of hypertension is endless, in more than 90 % of people with hypertension, thecauses are not known and is defined as ‘essential hypertension.

Table1:- Classification ofBlood Pressurein Adults(AmericanHeartAssociation).

Stages	SystolicBP(mmHg)	DiastolicBP(mmHg)
Normal	<120	<80
Elevated	Between120-130	<80
Stage1HTN	Between130-140	Between80-89
Stage2HTN	Atleast140	Atleast90
Hypertensivecrisis	Over180	Over120

[19]

Development of hypertension correlates to age i.e. its directly proportional to increasing age among bothsexes and this is because, with increasing age ,the aorta and artery walls will be stiffened thus high HTNprevalencein olderagegroups [19].

PrevalenceofHypertension

HTNgloballyamongpopulationaged18andoverwasaround22%in2014 [20].Studiesshow thatitcontributes nearly 9.4% million deaths from cardiovascular disease each year.This burden is growing that itmayaffect one in 3adults above25yearsoraboutonebillionpeople [21].

Africa has the highest prevalence of hypertension at 46% of adults and America has the lowest prevalence of35% of adults.Generally developed countries have alower prevalence of 35% of adults as compared to themiddleanddevelopingcountriesof40%ofadults[21].

In SSA the various studies carried out have indicated that HTN is a wide spreadproblem where somecommunities the prevalence is at 38%. It’s also estimated that out of the approximately650 million people in SSA, between 10-20 million may have HTN [22]. OtherNCDs,aresimilarly prevalent in SSA is increasing due to the epidemiological transition [22]; about 80%fromtheCVDoccurringamong low-income earners

The prevalence of hypertension in Uganda is high at 26.5% with the central highly plagued (28.5%). Eastern,WesternandNorthernregionsreported26.4%,26.3%and23.3%prevalenceratesrespectively.Theprevalencein urban centersstood at28.9%,3.1%morethan thatinruralareas[23].

AssociatedfactorsofHypertension

Familial history of hypertension indicates nearly 6 times morelikely to be hypertensive as compared to those who have not and those who had a high level of income werethree times more likely to be hypertensive [24]. Older age was a non-modifiable factorfound to be associated with hypertension [25-26], surveyindicatedthat hypertension is also associated with the following factors; olderage, male sex and also people withHIV/AIDS.

ObesityandHypertension

The greater the body mass,themorebloodisneededtosupply oxygenandnutrientstothe muscle andother tissues. Obesity alsoincreases the number and length of blood vessels andtherefore, increases resistance of blood that has totravel longer distances through those vessels.

The positive relationship between body weight and blood pressure has been reported in longitudinal studiesand has been replicated in other rapidly urbanizing setting in sub-Saharan Africa (Sobngwi et al., 2004). ThegrowingobesityepidemicinSSAhasbeenlargelyattributedtoincreasingconsumptionofwesternstylediets high in sugar and fat. However, cultural perceptions that value heavier body weight as a sign ofwellbeingand wealth cannot be underestimated[27].

Saltintakeandhypertension

Sodium and salt intake remain controversial as risk factors for hypertension, while it is true that someindividuals are particularly sensitive to sodium.Sodium is one of the minerals, or electrolytes that affectblood pressure.

PhysicalActivityandHypertension

Inactive teenagers are more likely to have higher blood pressure [27].Inactive adults tend to have higher heart rates, because their heart muscle does not functionefficiently and have to work harder to pump blood; this is because physicalactivityisavasodilatorandallows bloodtocirculatefaster.

Friedfoods

A study done in Korean showed that blood pressure significantly increased in men and women with a greaterthan twice a week consumption of fried food compared with those who rarely consumed fried food. Excessive intake of saturated fatty acidsand trans-fatty acids were risk factors forcardiovasculardiseasesincludinghypertension.AccordingtoDr.GregoryHarshfield,ahypertensionresearcherattheInstituteofPublicandPreventiveHealthatGeorgiaHealthSciencesUniversity,bothstressand fried foodscontributeequallyto high blood pressure.

Smoking

Cigarette smoking is a powerful cardiovascular risk factor and smoking cessation is the single most effectivelifestyle measure for the prevention of a large number of cardiovascular diseases. Impairment of endothelialfunction, arterial stiffness, inflammation, lipid modification as well as an alteration of antithrombotic andprothromboticfactorsaresmoking-relatedmajordeterminantsofinitiation,andaccelerationoftheatherothrombotic process, leading to cardiovascular events. Cigarette smoking acutely exerts a hypertensiveeffect, mainly through the stimulation of the sympathetic nervous system [28]. Thoughsmoking connection to high bloodpressure (HBP or hypertension) is still being determined.

Of theover4,000 toxic substances identifiedin cigarettesmoking, there isevidence that mainly two,specifically nicotine and carbon monoxide, exert toxic effects on the heart and blood vessels. Both thesecompounds show their harmful properties by different mechanisms. Nicotine damages cardiovascular systemacutely by stereoisomer and receptor binding mechanisms. The first produces potent cardiovascular andsympathoadrenal effects. In addition, repeated administration of nicotine is associated with the developmentof tolerance as a result of the nicotine- receptorbinding [29]. In addition, acute exposure topassive (environmental) smoking determines a gradual increase in blood pressure due to the combined effectof nicotine that acts by endothelial dysfunction and sympathetic stimulation. Moreover, carbon monoxide intobaccosmokeexerts its toxiceffect directly[30].

A study done in Vietnam showed that there were significant trends of increasing prevalence of hypertensionwith increasing years and pack-years of smoking after adjusting for age, BMI, and alcohol intake. Relative tonever-smokers, the risk of hypertension for those who had smoked for 30 years or more and those who hadsmoked 20 pack-years or more. Overall, however, current smokers were not at higher risk of hypertensionthan never-smokers and ex-smokers were more likely to be hypertensive than those who have never-smokers[31].AnotherstudydoneinPakistanwhichindicatedthatanunhealthyrelationshipexistsbetweenhypertensiona ndsmoking,asincidencesofhypertensionweremoreprevalentinsmokersascompared to non- smokers. In addition, both high systolic and diastolic blood pressure were more frequent insmokers compared to non-smokers. The present study suggests that a positive harmful relationship existsbetween blood pressure and smoking, and that smokers are more likely to develop high blood pressurecomparedto non-smokers [32].

StressandHypertension

Takele and Henok 2014,found that sleeping for less or equal to 5 hours per day was significantly associated with hypertension and inaddition similar studies also showed that for less or 3equal to 5 hours per day had higher frequency ofdevelopinghypertension[33].

Conclusion:-

In conclusion, prevalence of hypertension amongpatientsis moderately high. Smoking and being obese are significantly
associatedwithbeingathighriskofhypertensionwhilephysicalexercisessignificantlyreducedtheriskofhypertension.

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