PHYSICIANS ASSESSMENT OF TRADITIONAL CARDIOVASCULAR RISK FACTORS IN HYPERTENSIVE PATIENTS ATTENDING ABIA STATE UNIVERSITY TEACHING HOSPITAL (ABSUTH), ABA, ABIA STATE, NIGERIA

(1) Uzor IE. MBBS, FWACP. Consultant cardiologist, Department of Medicine, Abia State University Teaching Hospital, Aba, Abia State.

(2) Onwuchekwa UN. MBBS, FMCP. Consultant Nephrologist, Department of medicine, Abia State University Teaching Hospital, Aba, Abia State. E-mail: un_onwards@yahoo.com .

(3) Nkpozi MO. MBBS, FWACP. Consultant Endocrinologist, Department of Medicine. Abia state University Teaching Hospital, Aba, Abia State. E-mail: marcelnkpozi@gmail.com .

Corresponding Author: Dr Uzor IE, Consultant Cardiologist Department of Internal Medicine Abia State University Teaching Hospital, Aba P.M.B 7004 Aba, Abia State, Nigeria. Email: ueiwalata@Yahoo.com. Phone number: +2348035502315

ABSTRACT

Purpose: To evaluate doctors' assessment of cardiovascular risk factors in hypertensive patients with the intent of improving intervention outcome.

Methods: A retrospective review of 480 case notes of hypertensive patients seen at the medical clinic over a two-year period. Demographic characteristics, evaluation of cardiovascular risk factors and target organs, were assessed. Descriptive statistics was used to show the data distribution.

Results: Evaluation of smoking history, family history of coronary event, obesity and blood sugar were done in 68.6%, 4.2%, 33.3%, 100% respectively. Lipid profile, renal function and electrocardiogram were evaluated in 59.8%, 82.4% and 90.2% respectively. Level of physical activity and microalbuminuria were not assessed.

Conclusion: Evaluation for cardiovascular risk factors like obesity, physical activity level and microalbuminuria is poor in our hospital. We suggest creation of more awareness among physicians on cardiovascular risk evaluation.

Keywords: Cardiovascular risk factors, Assessment, Physicians, Tertiary Institution, Aba.

INTRODUCTION:

Hypertension is the commonest chronic disease with over 1 billion people affected worldwide, involving about 40% of adults over the age of 25years.[1] It is also on top of the ever- increasing pandemic of non-communicable diseases.[2] Hypertension is a major risk factor for cardiovascular disease (CVD) and increases the risk of morbidity and mortality from stroke, coronary artery disease, heart failure and renal failure[3] . Cardiovascular diseases remain the leading cause of death worldwide[4]

Development and progression of cardiovascular disease is shaped by the presence of cardiovascular risk factors. Traditional cardiovascular risk factors include hypertension, diabetes mellitus, dyslipidemia, obesity, smoking, family history of premature heart disease, microalbuminuria or glomerular filtration rate < 60mls/minute and sedentary lifestyle[5] Newer risk factors include increased levels of homocysteine, high sensitivity C-reactive protein(hsCRP), fibirinogen, triglycerides, glycated hemoglobin (HbAlc), lipoprotein a, plasma myeloperoxidase

and red cell glutathione peroxidase 1. Also included are ethnic origin and socioeconomic status[6] .The co-existence of these CVD risk factors forms the basis for risk stratification of patients for cardiovascular disease. Risk stratification helps to predict cardiovascular endpoint that may emerge within certain time frame[7] Identifying and monitoring for those factors is recommended for men greater than 40years and for women greater than 50years of age[8] and in all hypertensive patients. This is paramount in improving intervention outcome.[9] Again higher cardiovascular(CU)risk perception has been shown to be associated with better acceptance towards medical management.[10]

Many studies have shown the prevalence of these cardiovascular risk factors in several populations. However, there is paucity of studies that show the level of assessment of these factors by doctors. This study therefore sought to determine the degree of evaluation of the traditional CVD risk factors in hypertensive patients that attended the medical outpatient clinics of Abia State University Teaching Hospital, Aba Abia State.

SUBJECTS AND METHODS

This study was done in Abia State University Teaching Hospital, Aba, Abia State, a tertiary institution located in South-Eastern Nigeria.

Case notes of hypertensive patients that attended the medical clinics of the hospital between June 2015 and June 2017 were retrieved and relevant data obtained, using a data collection form that outlined the relevant parameters needed.

The information collected were patients hospital number, age, gender, hypertension diagnosis, co-existing diseases, blood pressure values, cardiovascular risk factors assessed for viz fasting

33

blood glucose for diabetes mellitus, lipid profile for dyslipidemia, smoking status, body mass index, waist circumference or waist/hip ratio, documentation of level of activity and family history of premature coronary event.

Assessment for target organ deficits viz electrocardiogram for left ventricular hypertrophy, urine test for microalbuminuria and electrolytes/urea/creatinine tests for deranged renal function was also documented. Data analysis was carried out using descriptive statistics.

RESULTS

The 480 hypertensive patients were aged 19years to 97years. Females were 285 (59.4%) and males 195 (40. 6%).The duration of hypertension was from 1-32years.

The number of patients hypertensive for < 5 years was 337(70.2%), 122 (25.4%) for 5-10 years and 21(4.4%) for >10years. The cases with mildly elevated blood pressure at first presentation was 219(45.6%), moderately elevated blood pressure was 196(40.8%) and 65(13.6%) had severely elevated blood pressure.

Co-existing diseases were; Diabetes mellitus 99 (20.6%), dyslipidemia 47 (9.8%), chronic kidney disease 28 (5.8%), cerebrovascular disease 20(4.2%), chronic obstructive pulmonary disease 15(3.2%), Ischemic Heart disease 17(3.6%), Bronchial Asthma 8(1.7%).

The documentation of the age of the patient, gender and test for blood glucose was seen in all patients. The level of evaluation of these risk factors as well as target organ involvement is shown in Figures 1 and 2.
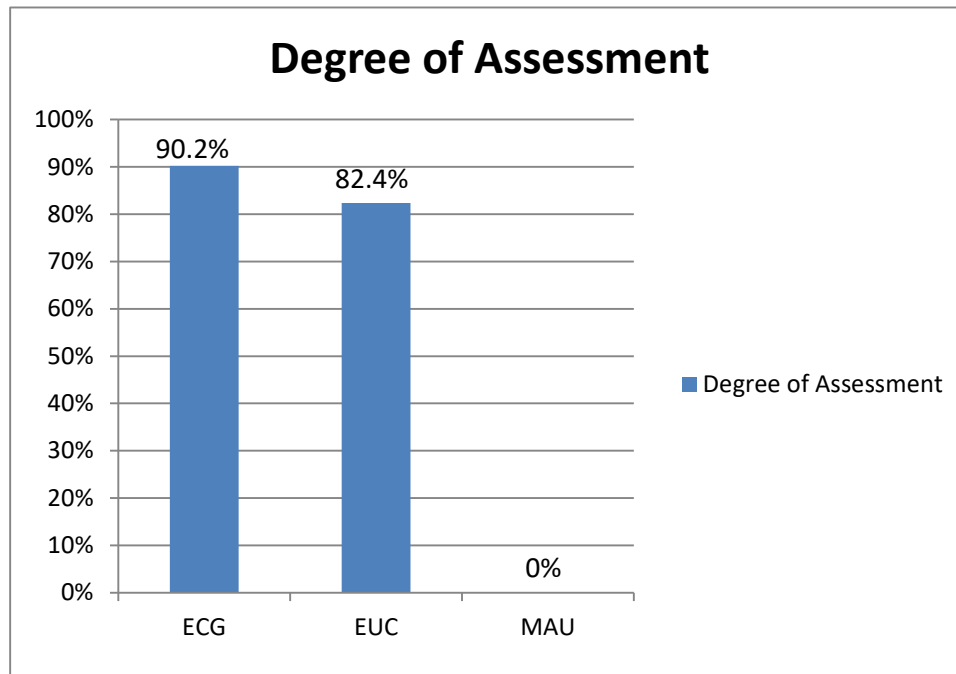
Figure 1; Evaluation for traditional cardiovascular risk factors .

Degree of Assessment
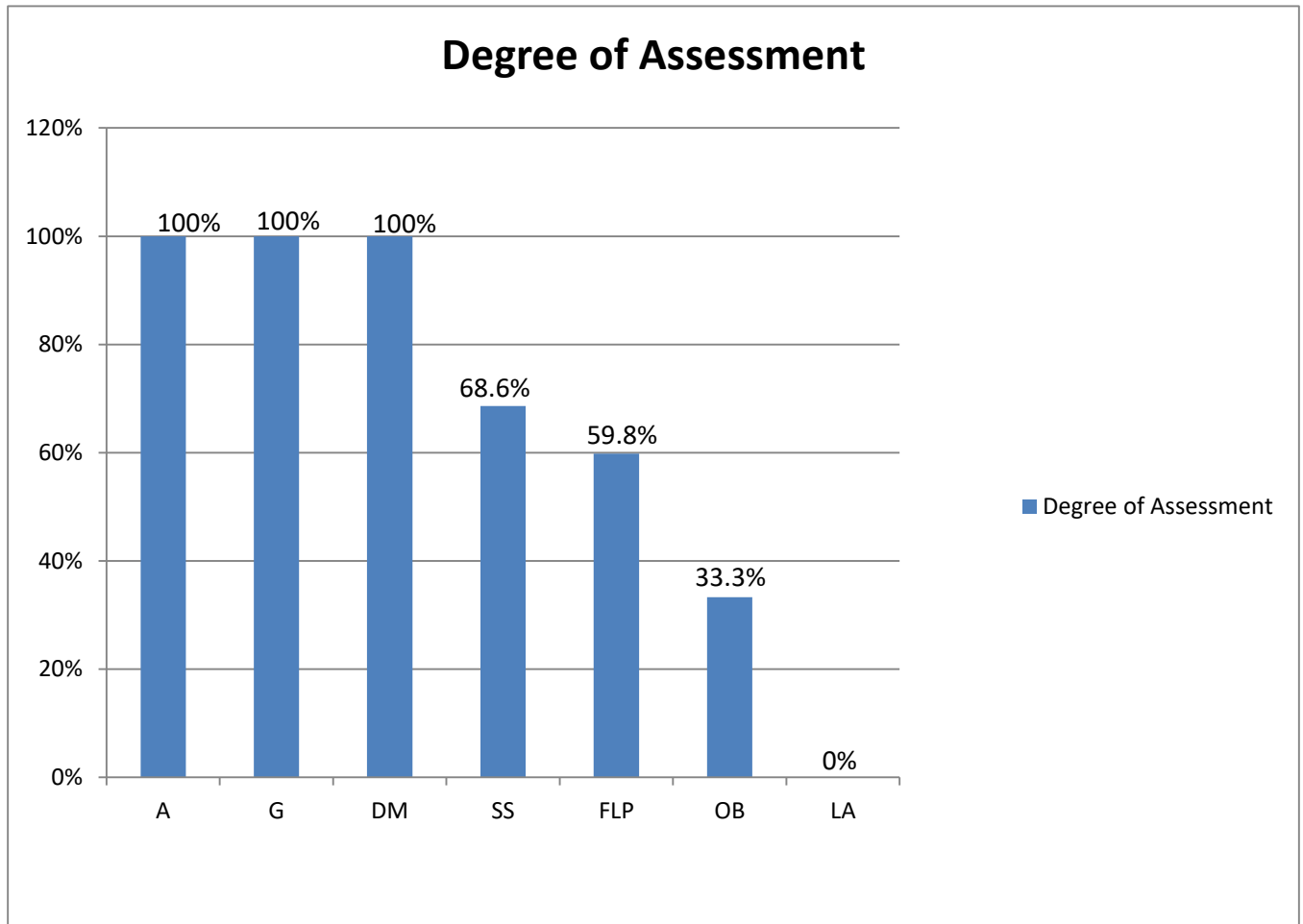
Key: A- Age, G- Gender, FLP- Fasting lipid profile, Dm- Diabetes Mellitus, SS- Smoking Status, Ob- Obesity,

LA- Level of activity

Figure 2; Evaluation of Target Organ damage using electrocardiogram ,electrolytes/urea/creatinine and microalbuminuria.

KEY: ECG=Electrocardiogram, EUC=Electrolytes,urea and creaatinine, MAU=Microalbuminuria.

DISCUSSION

Risk assessment is often considered the first step in the clinical management of cardiovascular disease.[11] Identification of the presence of cardiovascular risk factors in hypertensive patient that presented at the Abia State University Teaching Hospital, Aba, Abia State within the index period showed that the non-modifiable risk factors like age , gender were documented in all patients, however history relating to the presence/absence of premature coronary heart events in patients relatives were lacking, even in the hypertensive patients that had a comorbidity of ischemic heart disease.

36

The changing dynamics of cardiovascular disease the world over especially in developing countries should be a reminder to the physician in this part of the world; to adequately risk assess the patient even as it relates to coronary heart disease.

Blood pressure was measured in all patients. This was expected, as this study was about hypertension. Blood glucose was assessed in all the patients. This is commendable.

Evaluation for dyslipidemia using lipid profile was suboptimal in this study, 287(59.8%). This could reflect the persistence of the belief by some that dyslipidemia is not prevalent in Africa.

Akintunde ef al[12] in Ogbomoso Nigeria in evaluating the prevalence of dyslipidemia among 163 newly diagnosed hypertensive patients found that 58.9% of the patients had at least one impaired parameter in the lipid profile and 17.8% had combined dyslipidemia.

Oguejiofor et al[13] in their review of studies on dyslipidemia in Nigeria, reported dyslipidemia as widely prevalent in all parts of Nigeria ranging from 60% in apparently healthy individuals to 89% in diabetes. In the light of these studies, lipid profile should be assessed in all hypertensive patients. Financial constraints may be hindrance to this, particularly in the face of the "pay out of pocket system" of medical bill settlement. However, the fact that 396(82.4%) of the patients had heir renal functions evaluated, a test of similar cost to lipid profile may show the area of priority of the examining physicians.

Microalbuminuria was not assessed in any of the patients. This is most likely due to unavailability of the assessment tool. The benefits of microalbuminuria assessment of patients is likely to be lost in this population. Parving et al[14] put the prevalence of microalbuminuria in benign essential hypertension as 40%. Ogbu et al[15] in Enugu, Nigeria found a prevalence of

microalbuminuria in hypertensive patients to be 20%. These studies obviously necessitate screening for microalbuminuria in hypertensive patients.

Documentation of smoking status was 329(68.6%). Higher degree of such assessment should be expected as it is cost free. Oversight in documentation could play a role in the percentage mentioned. If risk stratification is routinely done for hypertensive patients, there will be improved documentation of the smoking status.

Evidence for the assessment of obesity using either body mass index or waist/hip ratio was very poor viz 160(33.3%). If unavailable measuring scales/instruments could explain infrequent measurement of weight and height, it will not explain measuring the waist/hip ratio as it requires a measuring tape only. There was no documentation of the level of physical activity of the patients. None of the patients was labeled as having a sedentary or active life style.

This obviously shows the level of utilization of this assessment in the overall management of hypertensive patients. This trend has been observed worldwide, a situation that prompted the Canadian Academy of sports and Exercise medicine to make the statement that every physician has an obligation to assess patients exercise habits and make prescriptions to this effect.

CONCLUSION

This study showed that there is poor evaluation of most cardiovascular risk factors in patients with hypertension. This translates to poor cardiovascular risk stratification of patients.

RECOMMENDATION

There should be creation of more awareness among doctors and even patients on cardiovascular risk evaluation. Sedentary lifestyle should be objectively defined by the evaluator so as to make a

documentation of its presence or absence and appropriate exercise regimen prescribed. Also the Hospital should ensure availability and easy access to measuring devices for evaluating BMI as well as tools for assessing microalbuminuria.

Conflicting Interest: Authors declared they have no conflicts of Interest.

Authors Contributions

Uzor IE conceived and designed the study, acquired the data, analyzed and interpreted the data, wrote the manuscript.

Onwuchekwa UN contributed in the design, writing and revision of the manuscript and gave final approval of the version to be published.

Nkpozi MO contributed in the writing and revision of the manuscript and gave final approval of the version to be published.

REFERENCES

[1] World Health Organization. A global brief on hypertension. Silent killer, global publication Health crisis. WHO 2013. Geneva Switzerland.

[2] World Health Organization. Global status. Report on Non-communicable Disease.2014. WHO, Geneva Switzerland 2014.

[3] Trilling JS, Froom J. The urgent need to improve hypertensive care. Arc Fam Med 2009;744-801

[4] GBD 2015. Mortality and causes of Death Collaborators (2016). Global, regional and national life expectancy; all cause mortality and cause. Specific mortality for 249 causes of death 1980-2015. A systemic analysis for the Global Burden of Disease study. Lancet 2015; 388:1459-1544.

[5] Traditional Cardiovascular risk factors. Oxford Medicine https/oxford Medicine.comview. 10.1092/med/97800198784;906.001.0001.

[6] Akhabue E, Thiboutot J, Chena JW, Vittona TJ, Christodoulides G, Grady KM et al. New and Emerging risk factors for coronary heart disease. Am J Med Sci 2014;347(2):151-158.

[7] Dean VJ, Antman EM, Black HR, Hayes DL, Manscon JE. The Cardiovascular disease continuum validated, clinical evidence of improved patient outcomes; part I: pathophysiology and clinical trial evidence (risk factors through stable coronary artery disease). Circulation 2006; 114:2850-2870.

[8] Pearson TA, Blair SN, Daniels SR, Eckel RH, Fair JM, Fortmann SP. AHA guidelines for primary prevention of cardiovascular disease and stroke 2002 update. Circulation 2002;106(3):388-391.

[9] Hayward RA, Reaven PD, Wiilala WL, Bahn GD, Rhoda MJ. Follow up of glycemic control and cardiovascular outcomes in type 2 diabetes. N Eng J Med 2015; 372:2197-2208.

[10] Banner C, Jansen J, Mckinn S. How do general practioners and patients make decisions about cardiovascular disease risk? Health Psychol 2015; 34:253-281.

[11] Wong ND. Cardiovascular risk assessment. The foundation of preventive Cardiology. https://doi.org/10.1016/j.ajpc.2020.100008

[12] Akintunde AA, Ayodole EO, Akinwusi OP, Opadijo GO. Dyslipidemia among newly diagnosed hypertensives. Pattern and clinical correlates. Natl Med Assoc 2010; 102:403-407.

[13] Oguejiofor OC, Onwukwe CH, Odenigbo CU. Dyslipidemia in Nigeria; prevalence and pattern. Ann Af Med 2012;11(4):197-202.

[14] Parving HH, Mogensen CE, Jensen HA, Evrin PE. Increased urinary albumin excretion rate in benign essential hypertension. Lancet 1974; 1:1190-1192.

[15] Ogbu ISI, Onah CE, Onwubere BJC, Ezeugwunne IP, Ezeonyebuchi JN, Onah CF et al. The prevalence of microalbuminuria among hypertensive patients attending University of Nigeria Teaching Hospital(UNTH) Enugu clinics. IOSR-JDMS 2013;10(4)161-164.