



JOURNAL OF KENYA ASSOCIATION OF PHYSICIANS

July 2022 Vol 4 No. 1 (Supplement 1)

ISSN 2663-6484



27TH – 30TH JULY 2022 | PRIDE INN SHANZU, MOMBASA



Poster and oral presentations

Editorial Board

Editor-in-Chief



Prof. George O. Oyoo

FACR, FRCP(Edin), FIPH, MMed, MBChB, Cert Trop Med, Clin Rheum, Cert Clin Epid, FCP(ECSA)

Associate Editors



Dr. Yusuf Karim

MBBS (Lon), MRCP (UK), FRCP (Lon), FCP (ECSA)



Dr. Mohamed A. Sood

MBChB, MD, MRCP (UK), Dip HIV (UK), DipMed-Law(UK), FCP (ECSA)

Members



Dr. Premanand Ponoth
MS, Mch, FIACS, FCCP, FICA



Dr. Amos E.O. Otedo
MD, MMed (Int. Med), FRCP (Edin)



Dr. Juzar Hooker
MBChB, MMed, DCN



Prof. Godfrey N. Lule
MBChB(Mak), MMed(UON), FRCP (Edin)



Prof. Elijah S.N. Ogola
MBChB(NBI), Cert Trop Med, MMed(NBI), FACC



Dr. George M. Nyale
MBChB, MMed (UoN) Fellowship Pulmonology (Wits)



Dr. Jemima Hoine S. Kamano
MBChB, MMed (Intern Med), MSc (Endocrinol)

Published by Kenya Association of Physicians
P.O. Box 48397 Code 00100, Nairobi, Kenya. www.kapkenya.org

FOREWORD

Dear delegates,

It is a great joy to welcome us all to this 39th Annual Scientific Congress of the Kenya Cardiac Society (KCS). It is a time of the year that cardiovascular practitioners in Kenya and in the region look forward to, as we network and update ourselves on the latest in cardiovascular care.

This year's Congress is special for us, because for the first time and in collaboration with the Kenya Association of Physicians (KAP), we have a supplementary edition of the Journal of the Kenya Association of Physicians (JOKAP), featuring various abstracts submitted to the Congress Committee.

We wish to congratulate all those who submitted their abstracts and particularly those whose research

made it to this journal. Every effort, every scientific endeavor in medical research is highly commendable. We would particularly like to laud colleagues who submitted abstracts from other East African countries. We celebrate you.

It is our endeavor to have this as a standard feature of the KCS congress and encourage many more to participate in future

We wish you a pleasant experience in this year's Congress
Kind regards

Dr. Lois Wagana
Dr. Anthony Gikonyo
For Abstract Review Committee

CONTENTS

POSTER PRESENTATIONS

Comparison of predicting bleeding complications in patients undergoing stent implantation and subsequent dual antiplatelet therapy (PRECISE-DAPT) risk score with the bleeding complications in a multicenter registry of patients discharged with a diagnosis of acute coronary syndrome (BleeMACS) risk score in patients with coronary artery disease in Kenya <i>Mugo PN, Jeilan M, Mzee LN, Hasham VM</i>	S1
Treatment options for HOCM: A surgeon's perspective <i>Ponoth P</i>	S2
Pulmonary atresia unmasked by SARS-COV-2 infection <i>Sean D, Amal F</i>	S3
Successful retrieval of an embolised intracardiac umbilical catheter fragment in a 1190gm preterm <i>Sean D, Amal F</i>	S4
A singular case of antiphospholipid syndrome with superior mesenteric (SMV) and portal vein (PV) thrombosis: treated with catheter directed thrombolysis <i>Patil V</i>	S5
Heart failure: To D or not to D, that is the question! <i>Theuri G</i>	S7
Six-month hospitalisation rate and associated factors instable heart failure patients at a tertiary hospital in Botswana <i>Dipatane VI, Molefe-Baikai OJ, Mwita JC</i>	S8
A randomized, double-blind, placebo-controlled, multicenter trial, assessing the impact of inclisiran on major adverse cardiovascular events in participants with established cardiovascular disease (VICTORION-2 PREVENT) <i>Gikonyo A</i>	S9
Case report: triple therapy for severe coronary ectasia with thrombosis and nstemi <i>Kipkulei K, Ngunga M</i>	S10
Surgical treatment of tricuspid valve disease, a spectrum of surgical techniques used in more than 2300 cases <i>Lentini S, Abbas M, Al Sal.Aadin O, Giovanella E, Portella G, Rolla L, Masini F</i>	S11
Utility of echo in the diagnosis and management of pericarditis: a single clinic experience <i>Mwazo K, Awadh A, Nduati B</i>	S12
Trends in annual incidence rates of newly diagnosed endomyocardial fibrosis cases at the Uganda Heart Institute: a fourteen-year review <i>Aliku TO, Rwebembara J, Lubega S, Wanzhu Z, Lugero C, Namuyonga J, Omagino J, Okello E, Lwabi PS</i>	S14
A rare cause of HFrEF: infiltrative cardiomyopathy <i>Owuor H</i>	S15
Cardiovascular diseases risk factors among people living with human deficiency Virus (PLWHIV) in Nairobi County, Kenya <i>Nyabera R, Osur J, Agina O</i>	S16

The role of occupational medicine in screening for hypertension: an underutilized pillar in healthcare <i>Murgor M, Mpekethu N, Chepchirchir I, Maliti P</i>	S18
Medication adherence and blood pressure control among hypertensive outpatients attending a tertiary cardiovascular hospital in Tanzania: a cross-sectional study <i>Pallangyo P, Komba M, Mkojera ZS, Kisenge PR, Bhalia S, Mayala H, Kifai E, Mwinyipembe KR, Khanbhai K, Wibonela S, Millinga J, Yeyeye R, Njau NF, Odemary TK, Janabi M</i>	S19
Non-communicable disease risk factors among caregivers of patients attending a tertiary cardiovascular hospital in Tanzania <i>Pallangyo P, Komba M, Mkojera ZS, Mayala HA, Bhalia SV, Millinga J, Wibonela S, Swai G, Minja DA, Janabi M</i>	S21
Burden and correlates of cognitive impairment among hypertensive patients in Tanzania: A Cross-Sectional Study <i>Pallangyo P, Mkojera ZS, Komba M, Mgopa LR, Bhalia S, Mayala H, Wibonela S, Misidai N, Swai HJ, Millinga J, Chavala E, Kisenge PR, Janabi M</i>	S22
Obesity epidemic in urban Tanzania: a public health calamity in an already overwhelmed and fragmented health system <i>Pallangyo P, Mkojera ZS, Komba M, Swai HJ, Misidai N, Mayala H, Bhalia S, Millinga J, Nkinda A, Matemtu G, Faraji H, Janabi M</i>	S24
A case of spontaneous recanalization following subtotal proximal-LAD occlusion: nature or witchcraft? <i>Pallangyo P, Longopa G, Meda JR, Mayala HA, Bhalia S, Mkojera ZS, Komba M, Millinga J, Wibonela S, Kisenge PR, Janabi M</i>	S26

Comparison of Predicting Bleeding Complications in Patients Undergoing Stent Implantation and Subsequent Dual Antiplatelet Therapy (PRECISE-DAPT) Risk Score with the Bleeding Complications in a Multicenter Registry of Patients Discharged with a Diagnosis of Acute Coronary Syndrome (BleeMACS) Risk Score in Patients with Coronary Artery Disease in Kenya

Mugo PN, Jellan M, Mzee LN, Hasham VM

Aga Khan University Hospital Nairobi, Kenya

Address for Correspondence: Dr Peter N Mugo. Email: mugopeter@yahoo.com

Abstract

Background: Long term use of antiplatelets after treatment of Coronary Artery Disease (CAD) increases the risk of bleeding. In order to minimize this risk, various risk stratification scores have been developed.

Objective: The purpose of the study was to compare the performance of PRECISE-DAPT and BleeMACS risk scores in predicting one-year bleeding risk.

Methods: This was a retrospective cohort study of patients 18 years and above after CAD treatment since May 2020 at the Aga Khan University Hospital, Nairobi. PRECISE-DAPT and BleeMACS bleeding Scores were calculated during hospital admission for treatment of CAD using data from the National Cardiovascular Data Registry. Patients were stratified into low risk (PRECISE-DAPT Score <17, BleeMACS score <16; moderate risk PRECISE-DAPT Score 18-25, BleeMACS score 17-25; and high risk PRECISE-DAPT Score >25, BleeMACS score >26). Univariate analyses was performed using the Kruskal Wallis test for continuous variables and Fishers Exact test for categorical variables. A p-value less than 0.05 was considered significant. All statistical analyses were carried out using RStudio.

Results: Data for 116 patients (78% males) was analyzed. The median age was 61 years (IQR 47-70). Sixty six percent of the patients were Africans, 26% Asians and 8% Caucasians. Fifty five percent of the patients had STEMI, 41% NSTEMI and the rest unstable angina. Seventy one percent, 12% and 17% of the patients had a low, medium and high PRECISE-DAPT score respectively while 60%, 23% and 17% had a low, medium and high BleeMACS score respectively. The PRECISE-DAPT score and BleeMACS score showed a high correlation. (Pearson correlation coefficient 0.8865929, $P < 0.001$). There was no association between the PRECISE-DAPT score and BleeMACS scores and other sociodemographic characteristics. Seventy six percent of the patients were discharged on DAPT (aspirin with clopidogrel 64%, ticagrelor 14%, prasugrel 18% and 4% not documented).

Conclusion: The bleeding discriminant ability of PRECISE-DAPT score is similar to BleeMACS score in this cohort of patients. Assessment of bleeding rates one-year post discharge and comparison with the bleeding scores is ongoing.

Treatment Options for HOCM: A Surgeon's Perspective

Ponoth P

The Karen Hospital, Nairobi, Kenya

Address for Correspondence: Dr Premanand Ponoth. Email: pponoth@gmail.com

Abstract

Background: Hypertrophic cardiomyopathy affects an estimated 600,000 to 1.5 million Americans or 1 in 500 people. Genetically you can inherit hypertrophic cardiomyopathy from your parents and pass it on to your children. Hypertrophic obstructive cardiomyopathy is an autosomal dominant genetic disorder in about 60% of cases. The thickened septum may cause a narrowing that can block or reduce the blood flow of LVOT. Sometimes the cause of hypertrophic cardiomyopathy is unknown, even though high blood pressure and aging are associated morbidities.

Methods: Two patients had septal myectomy in 2022 who were symptomatic. Both had trans aortic approach. The gradient came down from 90-100mm of mg peak to 20-25mm mg. The first patient was readmitted after 2 weeks after discharge due to fever, dyspnea and left side pleural effusion which was treated with ICD and antibiotic. The patient recovered well but had massive bleed from the ICD after 12 hours and died. The other patient is doing well and is on regular follow up.

Discussion: Since most symptoms from HOCM are related to left ventricular outflow tract obstruction, which occurs during systole, medical therapy is aimed at lowering the heart rate to allow better diastolic filling and using negative inotropic agents to decrease the force of contractility. The two mechanical therapies to treat HOCM are surgical myectomy and catheter-based alcohol septal ablation. Surgical myectomy, also known as septal myectomy, is simply performed when the surgeon removes the hypertrophied part of the interventricular septum, relieving the outflow tract obstruction. Complications include a ventricular septal defect, LV dysfunction or the development of complete heart block.

Conclusion: When performed by experienced operators working in high-volume centers, septal myectomy is highly effective with a >90% relief of obstruction and improvement in symptoms. The perioperative mortality rate for isolated septal myectomy in most centers is <1%. The final decision as to which approach should be selected in any given patient is dependent upon patient preference and the availability and experience of the operator and institution which the patient is being treated.

Pulmonary Atresia Unmasked by SARS-CoV-2 Infection

Sean D, Amal F

Aga Khan University Hospital Nairobi, Kenya

Address for Correspondence: Dr Del-Rossi Sean. Email:del-rossi.sean@aku.edu

Abstract

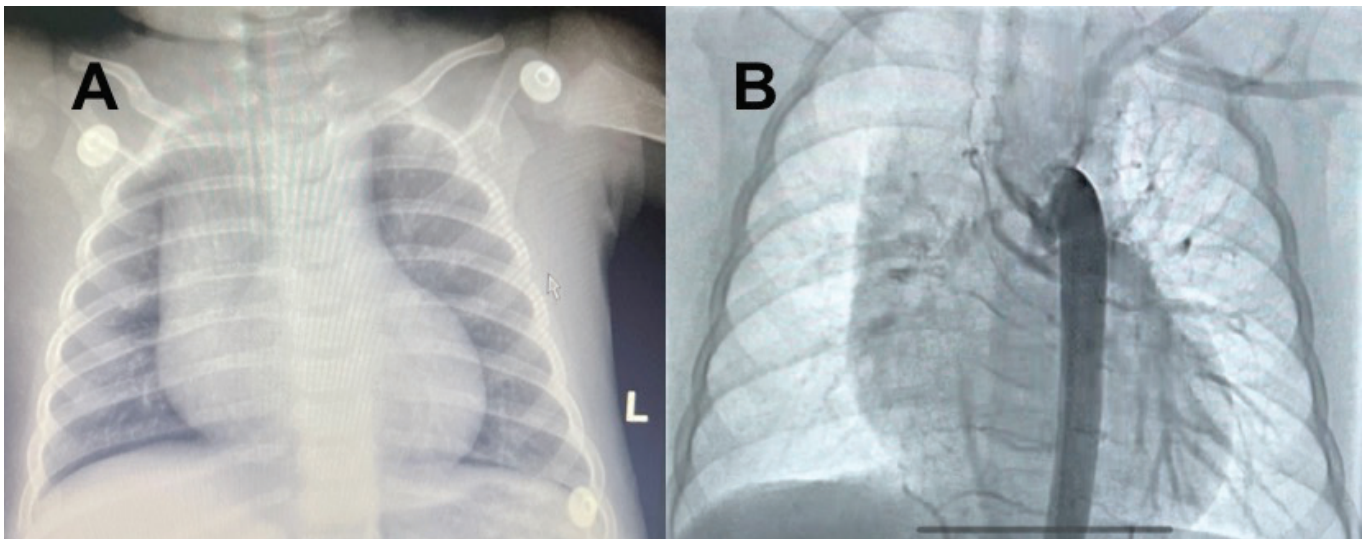
Background: Pulmonary atresia, defined by obstruction of the right ventricular outflow tract, is a rare complex cyanotic congenital defect. Echocardiography is the main stay of diagnosis while treatment strategies depend on the degree of right ventricle hypoplasia and the source of pulmonary circulation that dictate either complete biventricular repair or univentricular staged palliative surgery. A rare case presenting at 5 months of age during an acute Covid-19 infection is described.

Methods: A 5-month-old, following uneventful antenatal and post-natal periods was reviewed due to respiratory distress and cyanosis. Septic screen was unremarkable, however a positive SARS-CoV-2 PCR. Chest radiograph (Figure 1A) revealed a boot-shaped heart. Echocardiography demonstrated a hypoplastic

Right Ventricle (RV) with no flows seen from the right ventricle to the pulmonary artery. A diagnostic cardiac catheterization (Figure 1B) demonstrated a 4mm Patent Ductus Arteriosus (PDA) that was continuous with the left pulmonary artery and arborizing the left lung well. Right pulmonary artery was disconnected from the left and was fed by two-3mm collateral vessels from the descending aorta that were arborizing the right lung. The baby underwent a successful right and left pulmonary artery reconstruction followed by a Bidirectional Glenn Shunt and will be scheduled for a Fontan repair at the age of 3 years.

Conclusion: Pulmonary atresia is often missed. Globally, a four-limb pulse oximetry is a good non-invasive screening diagnostic test to diagnose critical congenital heart diseases in neonates that allows for early referral and intervention.

Figure 1: Chest radiograph (Figure 1A), AP view showing a boot-shaped heart with normal lung arborization. Fluoroscopic image (Figure 1B) showing contrast in descending aorta with filling of the pulmonary circulation through the Patent Ductus Arteriosus (PDA), good sized Left Pulmonary Artery (LPA) and right lung supplied by two small collateral vessels



Successful Retrieval of an Embolised Intracardiac Umbilical Catheter Fragment in a 1190gm Preterm

Sean D, Amal F

Aga Khan University Hospital Nairobi, Kenya

Address for Correspondence: Dr Del-Rossi Sean. Email: del-rossi.sean@aku.edu

Abstract

Background: Umbilical Venous and Arterial Catheters (UVC/UAC) are used for the administration of medications, fluids and parenteral nutrition, as well as blood sampling.

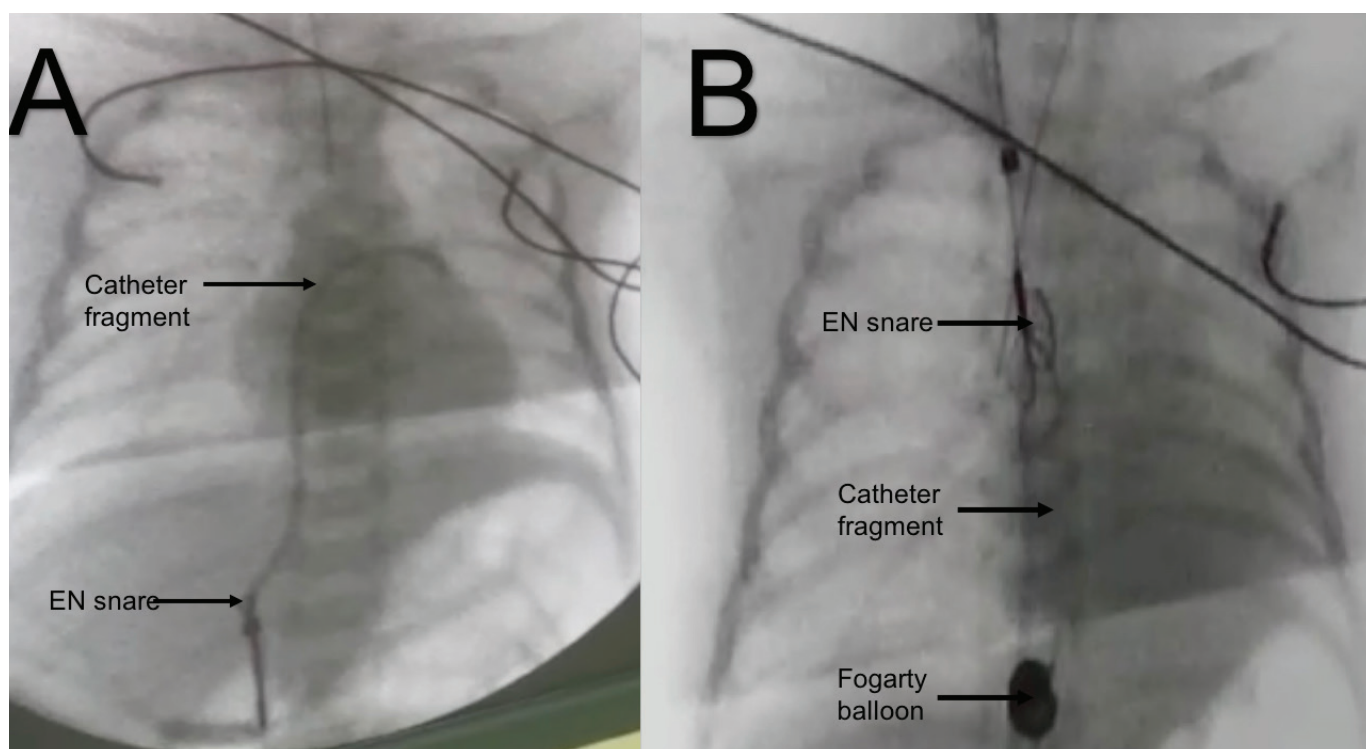
Objective: We report a case of accidental transection of an UVC that lodged in the Left Atrium Appendage (LAA) and its successful retrieval using a snaring technique with improvised use of a Fogarty Balloon.

Methods: A preterm baby had a 3.5 Fr UVC accidentally transected. Echocardiography confirmed that the distal tip of the catheter fragment had crossed from the Right Atrium (RA) to the Left Atrium (LA) and lodged within the Left Atrial Appendage (LAA). Decision to retrieve the catheter fragment percutaneously was made. Through the umbilical vein, A 6 Fr EN snare (Merit Medical) was introduced. Due to the large sized snare (smaller size snares were not

available) in comparison to vascular lumen's internal diameter, the snare, with each attempt, kept pushing the catheter fragment's lower end upwards with the distal end coiling in the LAA. With risk of perforation of the LAA, this maneuverer was abandoned. A 3 Fr Fogarty balloon was introduced, through a 4 Fr sheath, pushed through the IVC into RA. The balloon was inflated within the RA and pulled down towards the IVC-RA junction, this maneuverer allowed the catheter tip mid segment to shift down into the IVC as the fogarty balloon and catheter fragment held snugly within the IVC, with its distal end being pulled back from LAA to LA and into the RA. The SVC was accessed via a surgical cut-down and an 8cm catheter fragment was snared using the 6 Fr EN snare.

Conclusion: Umbilical venous catheters although safe and effective are prone to various rare complications, most importantly, embolization of catheter fragments.

Figure 1: Fluoroscopic image showing snaring attempt of catheter fragment by an EN snare, with distal end of catheter tip being pushed up and coiling within left atrial appendage (A). Snaring of the umbilical catheter fragment from the superior vena cava, with a fogarty balloon inflated and snugly holding the catheter fragment at the inferior vena cava-right atrium junction (B)



A Singular Case of Antiphospholipid Syndrome with Superior Mesenteric (SMV) and Portal Vein (PV) Thrombosis: Treated with Catheter Directed Thrombolysis

Patil V

Mediheal Hospital

Address for Correspondence: Dr Vijahsinh Patil. Email: dr.vijaysinh@gmail.com

Abstract

Background: Antiphospholipid Syndrome (APS) is an autoimmune condition associated with recurring vascular thrombosis and pregnancy morbidity. It's common in females, but we present a case with Superior Mesenteric (SMV) thrombosis in a gentleman who was treated with Catheter Guided Thrombolysis (CDT) and avoided high risk surgery.

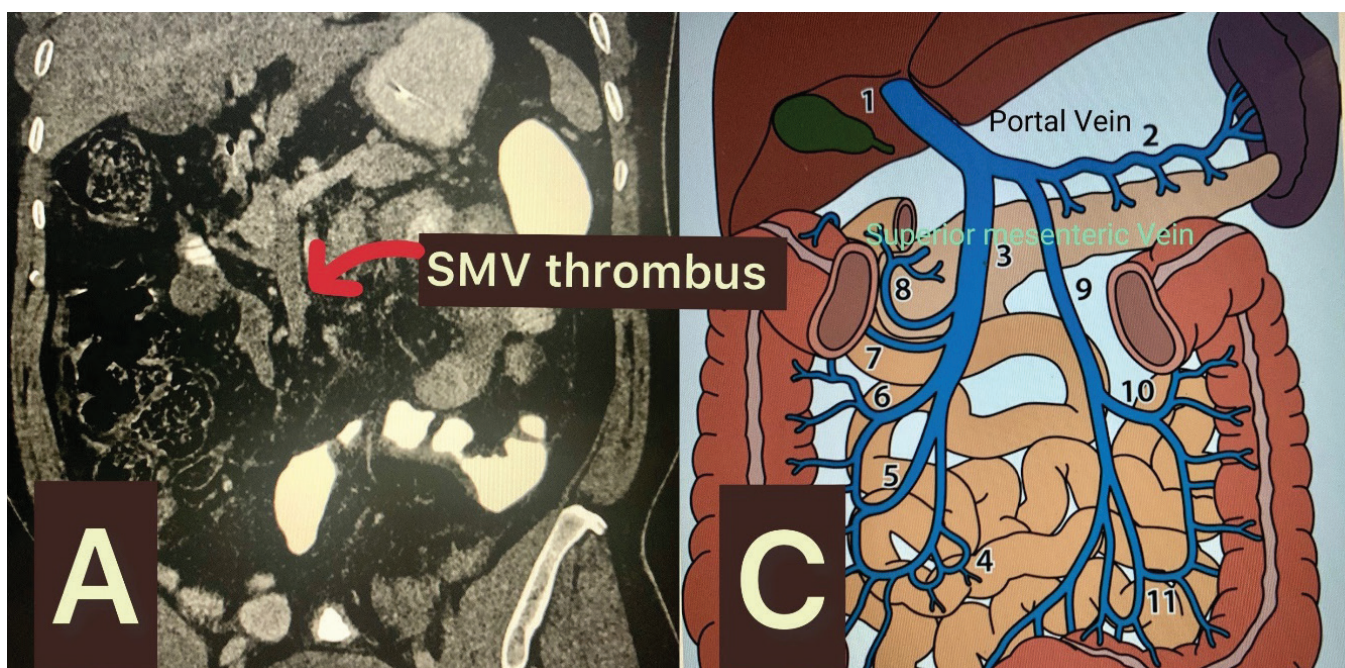
Case report: A 54 year old male presented with diffuse abdominal pain not responding to conventional treatment, was diagnosed with complete thrombosis of SMV and partial thrombosis of Portal Vein (PV) on CT abdomen. On thrombophilia profile, he was found to have APS which is scarce in males.

Results: Clinically, he was febrile, tachycardic with abdominal tenderness and signs of early sepsis. Lactate was normal. In view of no gangrenous changes in the bowel on CT with normal lactates, it was decided for CDT. After ruling out all contraindications

for thrombolysis, CDT was initiated by putting multi-holes catheter in superior mesenteric artery via femoral artery. Injection tenecteplase was given for 24 hrs. at the rate of 0.5- 1 mg/hr. after the initial 10mg bolus dose. Symptoms started resolving on second day post-thrombolysis. Laboratory results showed improved WBCs count. Repeated CT abdomen done after 3 days and at one month of post-thrombolytic therapy has shown significant improvement in blood flow in SMV and PV. He was commenced on NOAC's (Rivaroxaban 20mg OD) for lifetime with the advice of adequate hydration and regular follow up.

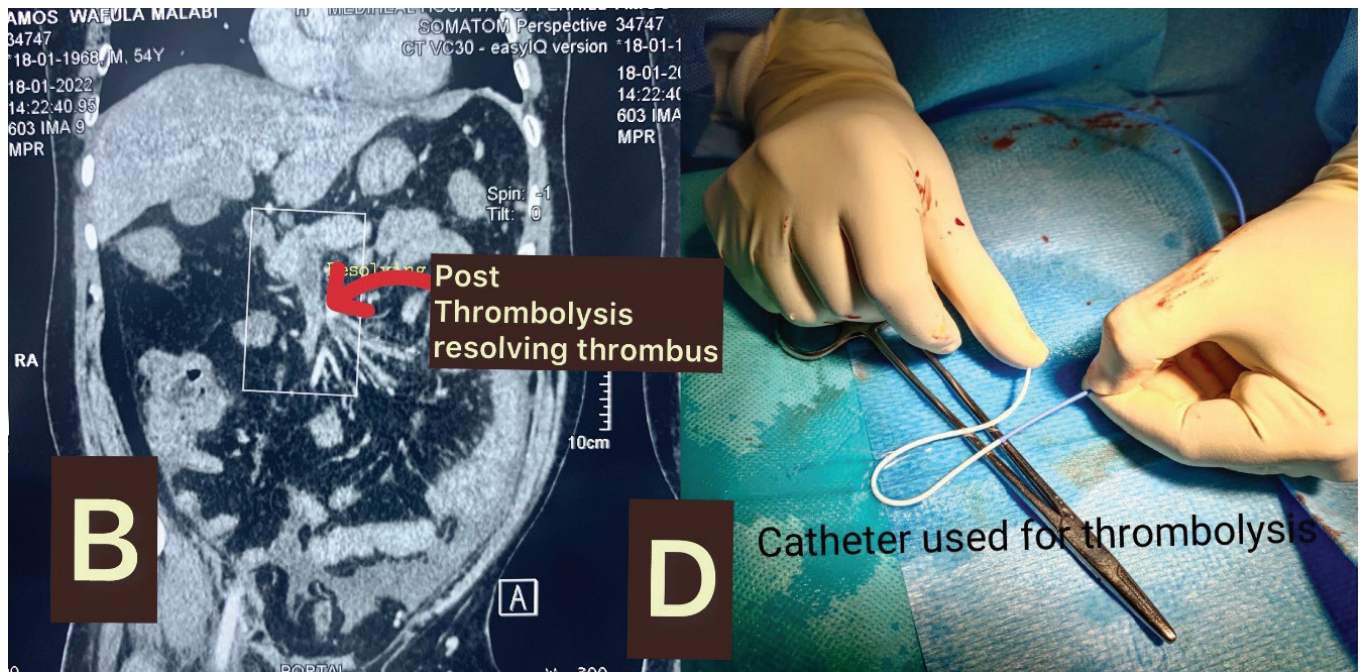
Conclusion: SMV and PV thrombosis are difficult to diagnose on clinical examination but CT abdomen plays a major role and helps in early detection. If treated early before intestinal gangrene sets in, CDT will work wonders and can prevent surgery like whole intestinal resection with long term morbidity and mortality.

Figure 1: A) CT abdomen with delayed venous phase showing thrombus in SMV (arrow) which extends into portal vein
B) Post CDT- CT abdomen showing recanalizing thrombus into SMV



C) Diagrammatic representation of the normal anatomy of SMV and portal vein

D) Modified Simon's II catheter with multiple holes in the proximal part used during the CDT



Heart Failure: To D or not to D, that is the Question!

Theuri G

Applied Human Physiologist, Human Performance Lab, School of Health Sciences, Kenyatta University, Nairobi, Kenya

Address for Correspondence: Dr Gitahi Theuri. Email: drgitahi@healthrite.co.ke

Abstract

Background: Sub-Saharan Africa's (SSA) increasing burden of hypertension with a pooled estimated prevalence of 30% on the back of sub-optimally controlled hypertension is a precursor for a Heart Failure (HF) crises in due course. Diverse challenges ranging from access to treatment, compliance with medication and poor follow-up, all point to the need for a multifaceted approach to mitigate HF sequelae.

Methods: Expression of calcitriol and Vitamin D Receptor (VDR) by cardiomyocytes, vascular and endothelial cells regulates cell maturation, differentiation, expression of cytokines and adhesion molecules. In addition, calcitriol down-regulates several matrix metalloproteinases (MMPs) and Renin-Angiotensin-Aldosterone System (RAAS) while VDR exerts anti-hypertrophic activity in the heart through regulation of the calcieurin-NFAR-MCIP1 pathway. Vitamin D deficiency is associated with progression of atherothrombosis, vascular calcification, increased

plaque instability and Myocardial Infarction (MI) incidence, all part of the HF sequelae. Despite SSA straddling the equator and enjoying optimal UVB radiation, of 290-315nm necessary for dermal synthesis of vitamin D, on most days of the year, the pooled vitamin D deficiency prevalence is estimated at 59.4% for a cutoff of less than 75 nmol (25ng/mL).

Conclusion: While the mechanistic role of vitamin D/VDR in optimal myocardial physiology is clear, clinical trials of vitamin D in prevention and treatment of CVD or HF appear at odds: the VITAL trial showed no significant reduction in occurrence of CVD while the VINDACTE trial showed significant improvement in LVEF and reversal of LV remodeling with daily vitamin D supplementation in HF, indeed "To D or not to D, that is the Question!"

Key words: Heart failure, Hypertension, Calcitriol, Ejection fraction, Inflammation, LVEF, Sub Saharan Africa, VDR

Six-Month Hospitalisation Rate and Associated Factors in Stable Heart Failure Patients at a Tertiary Hospital in Botswana

Dipatane VI^{1,2}, Molefe-Baikai OJ^{1,2}, Mwita JC^{1,2}

¹Department of Internal Medicine, University of Botswana, Gaborone, Botswana

²Department of Internal Medicine, Princess Marina Hospital, Gaborone, Botswana

Address for Correspondence: Dr Vincent I Dipatane, Department of Internal Medicine, University of Botswana, Gaborone, Botswana. Email: dipataneikageng@yahoo.com

Abstract

Background: Heart Failure (HF) is a prevalent condition with significant morbidity and mortality across countries despite advances in treatment. Hospitalisation for HF has a high risk of short term and long-term mortality. There is evidence that addressing factors associated with hospital admissions reduces the cost of care and mortality in patients with HF.

Objective: This study aimed to determine the frequency of heart failure admissions and associated factors within the first six months of enrolment into the HF registry at Princess Marina Hospital.

Methods: The study involved patients with HF registry at Princess Marina Hospital, a tertiary hospital in Gaborone, Botswana. The registry documents patients' demography, clinical characteristics, laboratory parameters, electrocardiography and echocardiography at baseline. Although subsequent follow-ups are individualised based on patient clinical conditions, the registry records their clinical, echocardiographic, admission and mortality outcomes every six months. We assessed the proportion of patients with at least any admission in six months since enrolment in the registry for the current study. We also evaluated the association of these admissions with demographic, clinical,

laboratory and echocardiographic data collected as part of the registry.

Results: The study involved 198 patients with HF whose mean (SD) age was 59.5 (17.6) years. The majority were female (58.6%) and in NYHA class I-III (57.1%). The median (IQR) Left Ventricular Ejection Fraction (LVEF) was 36 (24.53%), and 54% of patients had HF with reduced LVEF. Hypertension (52.0%) and diabetes mellitus (21.2%) were the commonest comorbidities, and over two-thirds of the patients were on Beta-blockers (65.6%), Angiotensin-converting enzyme inhibitors or angiotensin receptor blockers (73.2%), and mineralocorticoid antagonist (67.7%). Within six months of follow-up, hospital admission occurred in 44 out of 198 participants (22.2%). Low sodium ($p = 0.044$), NYHA class III-IV ($p = 0.039$), right ventricular dysfunction ($p < 0.001$) and pulmonary hypertension ($p = 0.027$) were associated with a higher risk of hospitalisation within six months of enrolment.

Conclusion: Almost a quarter of stable patients with HF are hospitalised after six months of follow-up. Hyponatremia, NYHA class III-IV, right ventricular dysfunction, and the presence of pulmonary hypertension are the important elements in hospital admissions of heart failure. Addressing these factors may likely reduce hospitalisation.

A Randomized, Double-Blind, Placebo-Controlled, Multicenter Trial, Assessing the Impact of Inclisiran on Major Adverse Cardiovascular Events in Participants with Established Cardiovascular Disease (VICTORION-2 PREVENT)

Gikonyo A

The Karen Hospital, Nairobi, Kenya

Address for Correspondence: Dr Anthony Gikonyo. Email: anthony.gikonyo@karenhospital.org

Abstract

Background: Cardiovascular Disease (CVD) is the leading cause of death worldwide, resulting in over 17million deaths annually. Elevated Low-Density Lipoprotein Cholesterol (LDL-C) is a well-recognized major risk factor for the development of CVD. Lowering LDL-C has been shown to reduce the risk of death or Myocardial Infarction (MI) or stroke. In Kenya, it is estimated that 25% of hospital admissions are due to CVD and 13% of autopsies revealed CVDs as a cause of death, representing the second highest cause of death after infectious/ maternal/ perinatal causes. (Kenya National guidelines for cardiovascular diseases management, 2018). VICTORION-2 PREVENT is a pivotal trial, designed to assess the benefits of treatment with inclisiran in addition to high intensity statin therapy on major adverse CV events in a secondary prevention cohort of ASCVD patients with elevated LDL-C.

Methods: Eligibility assessment will be conducted during screening and prior to receiving study drug on Day 1. Participants who meet all of the following inclusion criteria will be eligible for enrolment in this study.

- (i) Signed informed consent must be obtained prior to participation in the study.
- (ii) Male or female ≥ 40 years of age at signing of informed consent.
- (iii) Fasting LDL-C ≥ 1.8 mmol/L (70 mg/dL) at the screening visit, measured at the central laboratory. Participants who enter the Statin Optimization Period must have a fasting LDL-C ≥ 2.3 mmol/L (90 mg/dL) (measured at a local laboratory) at the Statin Optimization Screening Visit to be allowed to continue in the Statin Optimization Period.
- (iv) At the screening visit, participants must be on a stable (≥ 4 weeks) and well-tolerated lipid-lowering regimen (including e.g., with or without Ezetimibe) that must include a high- intensity statin therapy with either atorvastatin ≥ 40 mg QD or rosuvastatin ≥ 20 mg QD.

Results: This study has the opportunity to shape clinical practice for a large population of patients living with CVD. The only way we can find our answers is through cooperation with high performing recruitment sites.

Conclusion: There are many studies outside here fully sponsored to support the clinical work. One of them is the VICTORION 2 TRIAL.

Case Report: Triple Therapy for Severe Coronary Ectasia with Thrombosis and NSTEMI

Kipkulei K, Ngunga M

Aga Khan University Hospital, Kenya

Address for Correspondence: Dr Ken Kipkulei. Email: ckipkulei@gmail.com

Abstract

Background: A 54-year-old African male with dyslipidemia and hypertension, presented to the hospital with 12-hour chest pain, diaphoresis, and nausea. He had no other coronary risk factors. Initially, he was seen at a peripheral facility and referred to our facility for PPCI.

Methods: On arrival, the BP was 146/86 mmHg, HR 100 bpm, with normal physical examination. 12-lead EKG sinus tachycardia, inferior T-wave inversions without acute ST changes. Troponin was elevated at 15,339pg/ml. GRACE score 100. He received LMWH 1mg/kg bd, clopidogrel 300mg stat then 75mg od, atorvastatin 80mg bisoprolol 2.5mg od, perindopril 5mg/amlodipine 5mg od, and admitted to the CCU. The admission blood sugar and HBA1C were elevated. 2D-Echocardiogram: Anterolateral and inferior walls akinesia, LVEF 45-50%. Coronary angiography revealed diffuse mild atherosclerotic disease and ectasia in coronary tree. A dominant ectatic right (\approx 6mm

diameter) found with long-mid vessel thrombotic occlusion and distal TIMI II flow, with acute marginal and posterior descending artery thrombosis with TIMI II & 0 flow respectively. Thrombus aspiration done, IV heparin and eptifibatide x 2 boluses + 48hr 2mg/kg/min infusion. He was discharged on 4th day on DAPT and rivaroxaban 20mg od), pantoprazole 40mg od, bisoprolol 2.5mg od, amlodipine 5mg/ indapamide 2.5mg / perindopril 5mg od, metformin 500mg bd, and dapagliflozin 10mg od. Subsequent clinic visits at 2 and 6 weeks found him well, compliant to medication, and cardiac rehabilitation. A follow-up coronary angiography at 8 weeks revealed complete resolution of thrombi in right coronary artery including acute marginal and posterior descending arteries, now with TIMI II flows through out.

Conclusion: This case highlights the burden of coronary ectasia and thrombosis which is poorly studied. Antiplatelet therapy and anticoagulation are critical to their management and coronary stenting can be avoided.

Surgical Treatment of Tricuspid Valve Disease, a Spectrum of Surgical Techniques used in more than 2300 Cases

Lentini S, Abbas M, Al Sal.Aadin O, Giovanella E, Portella G, Rolla L, Masini F

The Salam Centre for Cardiac Surgery. "EMERGENCY" NGO Italia

Address for Correspondence: Dr Salvatore Lentini. Email: salvo.lentini@emergency.it

Abstract

Background: In patients with rheumatic heart valve disease, the tricuspid valve is affected mainly when pulmonary hypertension develops causing functional regurgitation due to annulus dilation. Organic tricuspid disease develops instead when the rheumatic disease affects directly the valve. In our Institution, during the years, we changed our approach to repair both functional and organic disease, either for the surgical indication either for the use of a spectrum of original multiple techniques.

Methods: Data from our surgical database were retrospectively analyzed. A total of 8192 surgical operations were performed for rheumatic valve disease, either first surgery or repeat surgery. In between those, a total of 2307 operations involved the tricuspid valve. Repair of functional regurgitation was achieved in the first years using a *De Vega* technique or a ring. Then, since the year 2016, a spectrum of annulus remodeling techniques using multiple purse

string stitches was used. Organic rheumatic stenosis was repaired using a novel technique that finally create a bicuspidization of the repaired valve.

Tricuspid repair was associated to mitral valve surgery in 1514 cases, associated to mitral and aortic surgery in 775 cases, associated to aortic valve surgery in 7 cases, and isolated tricuspid valve surgery was performed in 11 cases. Patients age ranged from 5 to 55 years (mean 22). There were 61.1% female and 38.9% male. Euro score II ranged from 0.5 to 47.06. Extracorporeal Circulation Time (ECC) ranged from 47 to 340 min (mean 128). Aortic cross clamp time ranged from 17 to 180 min (mean 73). Postoperative mortality occurred in 3.9% of patients.

Conclusion: We present our experience on the surgical treatment of the tricuspid valve in the setting of rheumatic valve disease. We focus on our surgical technique to repair the tricuspid valve, supported by echocardiography results and intra-operative clarifications.

Utility of Echo in the Diagnosis and Management of Pericarditis: A Single Clinic Experience

Mwazo K, Awadh A, Nduati B

Bicross Heart Solutions Limited, Mombasa

Address for Correspondence: Dr Kieran Mwazo. Email: bicrossheartsolutionsmbd@gmail.com

Abstract

Background: Pericardial diseases are very common worldwide with diverse etiologies including infectious, autoimmune, post-myocardial infarction, and autoreactive causes. 2D and Doppler echocardiography is the first-choice modality in diagnosis and follow up of almost all types of pericardial diseases (acute pericarditis, recurrent pericarditis, pericardial effusion or tamponade, Constrictive Pericarditis (CP), pericardial masses, and congenital anomalies of the pericardium). Here we present our clinic experience in the evaluation of seven patients with pericarditis.

Methods: We conducted a retrospective analysis of seven patients on follow up at our clinic for pericarditis. Fifty seven percent were male. The commonest presenting complaints included pleuritic chest pain (71%) and shortness of breath (28%).

Results: Echo findings were diverse with the key findings as follows:

- Thickened (Echo bright) pericardium 43%
- Pericardial effusion 29%

- Respirophasic ventricular septal shift (also called septal bounce) - 29%
- Increased mitral E-wave velocity and E/A ratio >1.6 (in expiration) 29%
- Respiratory variation of peak mitral E-wave velocity (at least >25%) 29%
- Preserved or exaggerated medial mitral annulus early diastolic (e') velocity (≥ 9 cm/s) 29%
- Medial e' equal to or greater than lateral mitral annulus e' velocity (annulus reversus) 29%

Conclusion: Echocardiography is an invaluable tool for the assessment of pericarditis/pericardial effusion. Nevertheless, there is a large variability in specificity and sensitivity of the typical echocardiographic findings in patients with pericarditis. An echo bright pericardium with/without pericardial effusion seems to be the commonest finding. We therefore conclude that diagnosis and follow up of pericarditis should always be made following a proper clinical assessment with the help of typical 12 lead ECG and 2D ECHO findings.

Figure 1: Peak mitral E-wave velocity variation of >25%

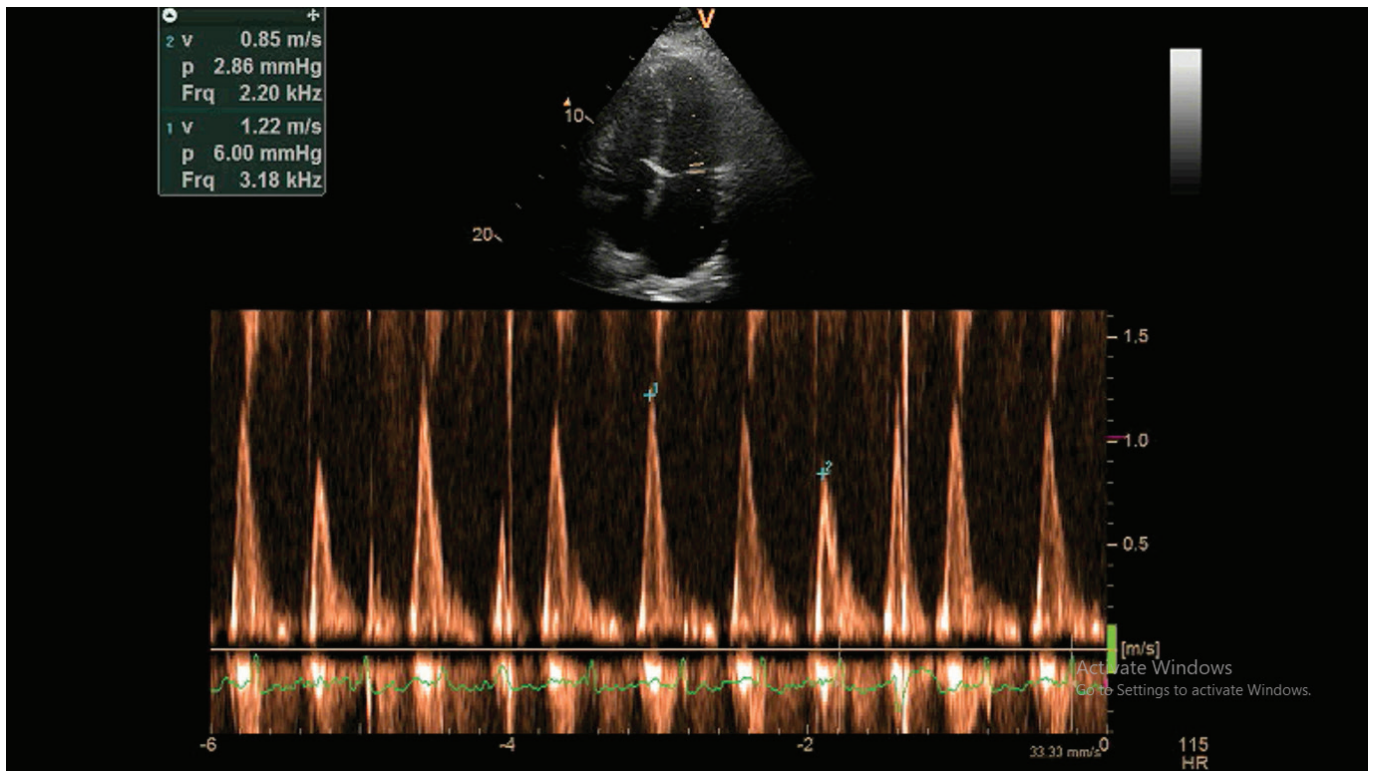
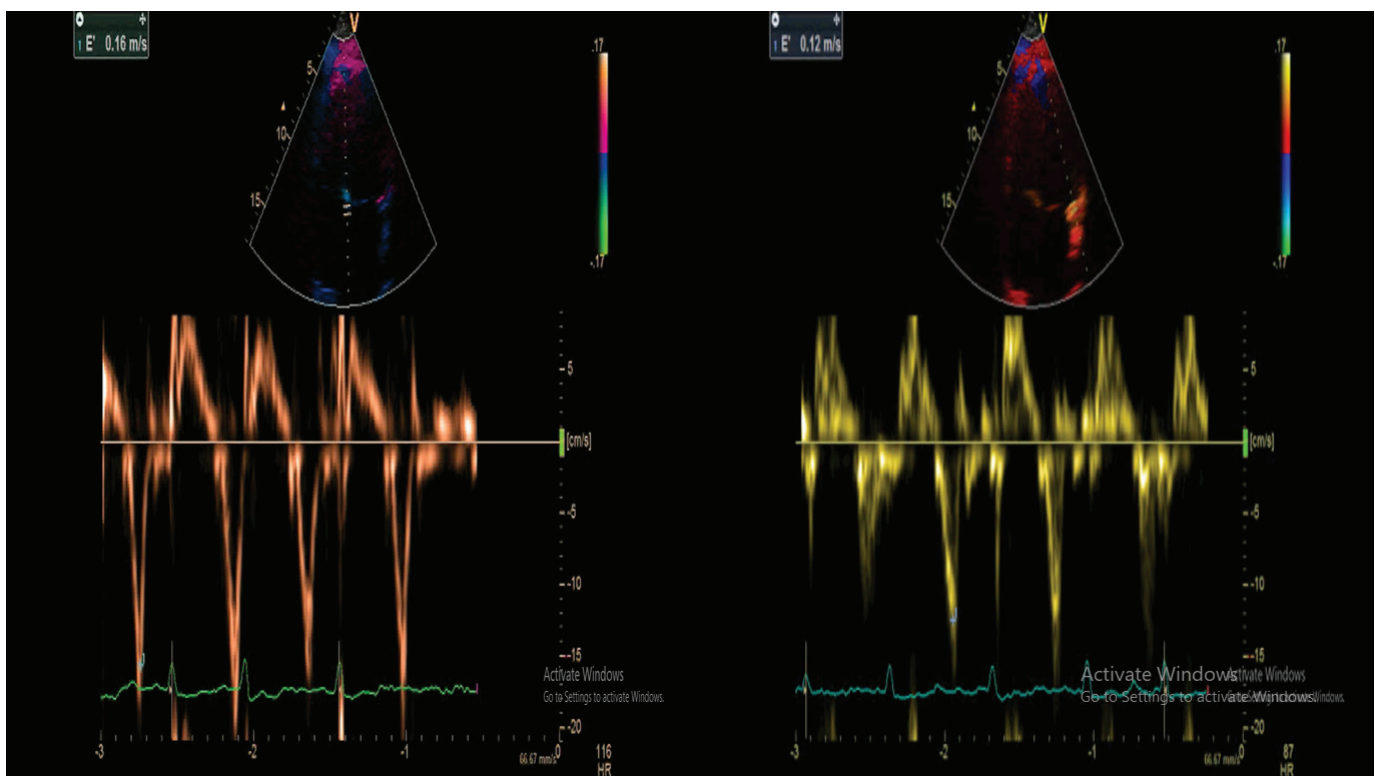


Figure 2: Medial e > lateral e (annulus reversus)



Trends in Annual Incidence Rates of Newly Diagnosed Endomyocardial Fibrosis Cases at The Uganda Heart Institute: A Fourteen-Year Review

Aliku TO^{1,2}, Rwebembera J¹, Lubega S¹, Wanzhu Z¹, Lugero C¹, Namuyonga J^{1,3}, Omagino J¹, Okello E^{1,3}, Lwabi PS¹

¹Uganda Heart Institute, Mulago Hospital Complex, Kampala, Uganda

²Uganda Christian University School of Medicine, Mukono, Uganda

³Makerere University College of Health Sciences, Kampala, Uganda

Address for Correspondence: Dr Twalib O Aliku. Email: twalib90@gmail.com

Abstract

Background: First described in Uganda over seven decades ago, Endomyocardial Fibrosis (EMF) is a rare form of restrictive cardiomyopathy found in the tropics. EMF occurs mainly in two phenotypes; biventricular involvement and Right Ventricular (RV) form. Previously endemic in several countries, there are reports suggesting that the disease is on the decline.

Objective: This study was to describe trends in annual incidence rates of newly diagnosed EMF cases at the Uganda Heart Institute (UHI).

Methods: This was a retrospective chart review of all new EMF cases at UHI from January 2007 to December 2020. Cases were divided into two groups; A (2007-2013) and B (2014-2020).

Results: A total of 155 cases were diagnosed during the period (Group A, n=124; Group B, n=31). There were no significant differences between the two groups A and B regarding median age at diagnosis (14 vs 12 years, p=0.0940), gender (48.4% female vs 35.5%, p=0.1987), and EMF type (66.9% RV EMF vs 71.0%, p=0.6634) respectively. The presence of

complications such as intracardiac thrombus (5.6% vs 32.2%, p=0.0002) and pericardial effusion (57.3% vs 80.6, p=0.0172) were more frequent in group B than A respectively. Pulmonary Hypertension (PHT) was predominantly seen in cases with biventricular EMF compared to those with RV EMF (26% vs 3.8%, p=0.0001). The number of new cases diagnosed per year remained largely stable in the period 2007-2011, ranging 14-21 per year, peaked in 2012 (26 new cases), and thereafter declined from 10 cases seen in 2013 to 1-5 cases seen per year in the period 2017-2020. The annual incidence rates of new EMF diagnosis remained relatively stable in the period 2007-2012, ranging between 22.7-29.7 per 10,000 patients seen in the echo labs, and then dramatically declined after 2012 to range between 1.0-4.5 new cases per 10,000 patients in the period between 2017 and 2020.

Conclusions: There has been a steady decline in the number of new cases of EMF seen at the UHI. However, there were no significant differences in the gender, age at diagnosis and EMF subtype of cases during the study period. Complication rates were more frequent in the later cohort.

A Rare Cause of HFrEF: Infiltrative Cardiomyopathy

Owuor H

The Karen Hospital, Nairobi, Kenya

Address for Correspondence: Dr Henry Owuor. Email: owuorkembo@gmail.com

Abstract

Background: Infiltrative cardiomyopathy is characterized by deposition of abnormal substances within the heart tissue resulting in diastolic dysfunction and less commonly systolic dysfunction late in the course of the disease. The more common types of infiltrative cardiomyopathy are cardiac amyloidosis, sarcoidosis, and hemochromatosis.

Case report: This case report narrates the medical journey of a 73-year-old retired security officer who presented to the cardiac clinic with dyspnea on exertion, orthopnea, paroxysmal nocturnal dyspnea, abdominal swelling and pain, dizziness, fainting episodes, low BPs and soft tissue injury to the left leg following a fall. He had low-voltage QRS complexes, Right Bundle Branch Block (RBBB) with associated Left Anterior Fascicular Block (LAFB) on electrocardiogram, echocardiogram demonstrated reduced systolic function whereas the cardiac MRI

(CMR) demonstrated restrictive cardiomyopathy with both systolic and diastolic dysfunction concluding that there is infiltrative cardiomyopathy due to either sarcoidosis or amyloidosis (ATTR-amyloidosis). He also had hypothyroidism and chronic kidney disease.

Conclusion: Low-voltage QRS (all limb leads <5 mm in height) in conjunction with other abnormalities of conduction is pathognomonic of cardiac amyloid. CMR in conjunction with tissues from other organs like abdominal fat pad (fine needle aspirate), rectum or kidney staining positive for amyloid affirms the diagnosis of cardiac amyloid. Caution must be exercised while using the guideline medical therapeutic drugs that form the pillar of comprehensive heart failure therapy as they have many untoward side effects.

Key words: Infiltrative cardiomyopathy, Restrictive cardiomyopathy, Cardiac MRI (CMR), Amyloidosis, Sarcoidosis

Cardiovascular Diseases Risk Factors among People Living With Human Deficiency Virus (PLWHIV) in Nairobi County, Kenya

Nyabera R , Osur J, Agina O

Aga Khan University Hospital, Kenya

Research project submitted in partial fulfilment of the requirement for the award of the degree of Masters of Public Health (Monitoring and Evaluation) in the School of Community Health of Kenyatta University

Address for Correspondence: Mrs Rosanne Nyabera. Email: alooroseanne@gmail.com

Abstract

Background: Life expectancy of People Living With Human Deficiency Virus (PLWHIV) has improved dramatically since the use of Highly Active Antiretroviral Therapy (HAART). Longer life expectancy for PLWHIV display a relatively increased occurrence of Cardiovascular Diseases (CVD) is linked to the traditional CVD risk factors, Antiretrovirals (ARVs) and immunological dynamics. PLWHIV had a 1.5 to 2-fold increased risk for CAD, mechanism based on a pro-inflammatory state. HAART use has been linked to hyperglycemia, dyslipidemia, and increased risk of CVD. There is need to improve understanding of both lifestyle-related risk factors and the underlying mechanisms of CVD onset. Previous studies in Kenya were mainly from Nyanza, Central, Coast and Machakos counties and do not therefore reflect the CVD risk among PLWHIV in Nairobi County. Thus, need for further studies to demonstrate the magnitude of the problem in Nairobi County, a metropolitan area, and inform interventions geared to the prevention. There is need for further studies on the use of HAART as a CVD risk associated factors.

Objective: The purpose of the study was to establish the prevalence of cardiovascular risk factors among people living with Human Immuno-deficiency Virus (PLWHIV) in Nairobi County. Specific objectives; to determine the relationship of socio demographic characteristics; prevalence of biological CVD risk factors, evaluate the relationship between behavioral factors and determine the relationship between use of ARVs treatment and CVD risk factors among PLWHIV.

Methodology: The study employed a descriptive cross-sectional study design, conducted in four comprehensive care clinics in Nairobi County hospitals. The participating clinics were purposively selected and proportionate sampling technique used to determine the number of individual participants per facility. A sample of 405 participants was drawn from the more than 10,000 target population. A data

collection form and an observation checklist used. Various measurements were taken to determine the clinical status of the participants. Pre-testing of the tools was done to establish the validity and reliability of the instruments.

Results: Data analysis included both descriptive statistics as well as inferential statistics which were used to draw inferences. The prevalence of CVD is higher in male than female (7.2: 4.0). Higher percentage of ≤ 50 years old were more likely to have CVD risk compared > 50 years old. Secondary level of education registered lower prevalence compared to the other level of education. Employed PLWHIV were less likely to have CVD risks compared to unemployed or self-employed. The 25.2% prevalence compared with the National prevalence of 25.4% for the four CVD risk factors) and higher than the general population in Kenya of 24%. The results indicated that 25.2% of PLWHIV were overweight and obese, 35.8% had elevated Random blood sugar levels, 20.3% had Random cholesterol level above 200mg/dl and above, predisposing to the CVD. 48.1% of PLWHIV had pre hypertension (Stage 1) 130-139 < 90 while another 12.8% had high blood pressure, HTN (stage 2) > 140 or > 90 . Results from regression analysis gender and age were found to have ($P < .05$). Results from regression analysis also indicated that use of tobacco and alcohol did not have any significant relationship with CVD risk factors. Frequency of BP measurements and CVD risk factors at 0.010. CD4 count was found to have a significant relationship at 0.04 with CVD risks among PLWHIV. (Levels below 500cells/mm). Regression analysis results indicated that with other factors held constant at 7.744, then a .310 change in socio-demographic characteristics, .419 change in use of ARVs factors and a .360 change in behavioral factors will contribute to a unit change in the CVD risk factors. While the use of ARVs and socio-demographic characteristics did not have significance relationship with CVD risk, while behavioral factors had significance relation with CVD risk among PLWHIV.

Conclusion: The study results indicated that gender, age and education level of the PLWHIV were found to have significant relationship with CVD risk among PLWHIV. The findings of the study established a 25.2% prevalence of CVD risks among PLWHIV which can be compared with the national prevalence of 25.4% for the four CVD risk factors and 24% for the general population in Kenya. The study findings is higher than the findings of 10% CVD risk prevalence among PLHIV as reported in the literature. Tobacco and use of alcohol was found not to have a significant relationship with other CVD risk factors. This diverges from findings in the literature. CD4 counts levels significant for most risk factors when levels are below 500cells/mm thus independent risk factor for incident

CVD risk. Findings indicate the use of ARVs has not been having any significant relation with CVD risk among PLHIV. However, this does not emphasize the importance of use of ARVs in the reduction of severity of HIV given that PLHIV have a higher CVD risk than HIV-negative people. Among PLWHIV, black men and younger patients are more likely to have CVD risk factors. Awareness on modifiable and non-modifiable CVD risk factors, there is need to evaluate and address socio-demographic factors, and monitor CD4 levels in PLWHIV, below 500cells/(mm) is an independent risk factor for incidence of CVD, comparable in attributable risk to several traditional CVD risk factors in PLWHIV scale up screening for CVD risk factors and prompt education related to the risks.

The Role of Occupational Medicine in Screening for Hypertension: An Underutilized Pillar in Healthcare

Murgor M, Mpekethu N, Chepchirchir, Maliti P

Directorate of Occupational Safety and Health Services, P.O. Box 34120-00100 GPO, Nairobi, Kenya

Address for Correspondence: Dr Mellany Murgor. Email: murgormellany@gmail.com

Abstract

Background: Kenya has a population of 47.5 million people (KPHC, 2019), with a total working population of 18 million. Approximately 3 million are employed in the formal sector and 15 million in the informal sector across the country (KNBS, 2020). The Directorate of Occupational Safety and Health Services (DOSHS), at the Ministry of Labour, is tasked with ensuring a healthy worker in a safe working environment across all workplaces in the country. Work stressors have been associated with a significant risk in Cardiovascular Diseases (CVDs), whose biggest risk factor for their development is hypertension. While efforts by the Ministry of Health, doctors and other non-state actors focus on the treatment, there are limited mainstream robust programs for screening of hypertension as a major risk factor for CVDs. Conducting statutory medical examination of workers is one of the activities DOSHS undertakes to assess and monitor workers' health. Designated Health Practitioners (DHPs) authorized by the directorate examine workers and report data in a prescribed format to the directorate.

Objective: The goal of this situational analysis is to establish whether the data generated from statutory medical examination of workers can be used to increase the screening/diagnosis capacity of the existing programs.

Methods: A cross-sectional study analyzing reports submitted by DHPs on occupational medical examinations conducted in Kenya over one year. Data on workers recorded to have had high blood pressure will be obtained, analyzed using excel sheets and the results presented graphically.

Results: Preliminary findings will highlight the prevalence of hypertension among the workforce in Kenya, workplace risk factors for hypertension and the opportunities available for linkage to mainstream care as well as follow up.

Conclusion: Considering that occupational medical examinations are anchored in law, they are an underutilized avenue for screening, diagnosis, patient follow up, data forecasting and resource planning for hypertension.

Key words: Hypertension, Occupational medicine, Screening, Cardiovascular diseases

Medication Adherence and Blood Pressure Control among Hypertensive Outpatients Attending a Tertiary Cardiovascular Hospital in Tanzania: A Cross-Sectional Study

Pallangyo P^{1,2}, Komba M¹, Mkojera ZS¹, Kisenge PR^{1,2}, Bhalia S², Mayala H³, Kifai E³, Mwinyipembe KR², Khanbhai K^{1,2}, Wibonela S⁴, Millinga J⁴, Yeyeye R⁴, Njau NF³, Odemary TK³, Janabi M²

¹Unit of Research and Training, Jakaya Kikwete Cardiac Institute, P.O Box 65141, Dar es Salaam, Tanzania

²Directorate of Cardiology, Jakaya Kikwete Cardiac Institute, P.O Box 65141, Dar es Salaam, Tanzania

³Directorate of Clinical Support Services, Jakaya Kikwete Cardiac Institute, P.O Box 65141, Dar es Salaam, Tanzania

⁴Directorate of Nursing, Jakaya Kikwete Cardiac Institute, P.O Box 65141, Dar es Salaam, Tanzania

Address for Correspondence: Dr Pedro Pallangyo, Jakaya Kikwete Cardiac Institute, P.O Box 65141, Dar es Salaam, Tanzania. Email: pedro.pallangyo@gmail.com

Abstract

Background: Notwithstanding the widespread use of blood pressure lowering medications, hypertension which affects a quarter of the global population is having its biggest toll in the sub Saharan Africa region (prevalence 46%). Suboptimal adherence, a key contributor to uncontrolled hypertension, is associated with development of hypertensive complications, increased risk of cardiovascular events and poor survival prospects.

Objective: This cross-sectional hospital-based study aimed to explore the prevalence and associated factors for medication adherence among outpatient hypertensives attending a tertiary level hospital in Tanzania.

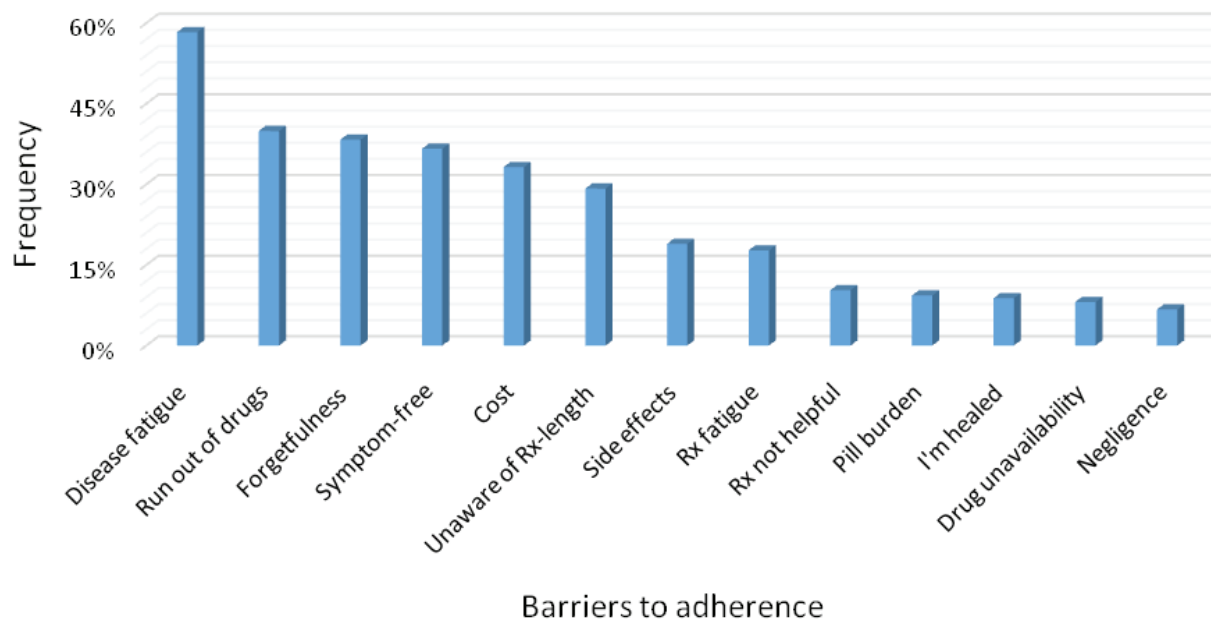
Methods: A structured questionnaire was utilized for data collection and standard protocols were observed in all clinical measurements. Adherence was measured as the proportion of pills taken out of the total number of pills prescribed during the last visit. In descriptive analyses, adherence was dichotomized and consumption of less than 80% of the prescribed medications was used to denote poor adherence. Linear regression analysis was employed in the assessment of associated factors. All analyses were two-sided and a $p < 0.05$ was used to denote significance.

Results: A total of 849 outpatients taking antihypertensive drugs for ≥ 1 month prior recruitment were randomly enrolled in this study. The mean age was 59.9 years and about two-thirds were females.

Approximately 0.3%, were current smokers, 5.9% alcohol consumers, 74.0% were insufficiently active and 80.2% had excess body weight. With reference to awareness of risk factors for hypertension; excess salt intake was mentioned by 38.2% of participants, excess fat intake by 67.4%, overweight by 16.8%, physical inactivity by 12.7%, smoking by 3.9%, excess alcohol intake by 10.3% and positive family history by 3.2%. Overall, a total of 653 (76.9%) participants had good adherence and 367 (43.2%) had their blood pressure controlled. Multivariate logistic regression analysis showed; lack of a health insurance (OR 0.5, 95%CI 0.3-0.7, $p < 0.01$), last BP measurement > 1 week (OR 0.6, 95%CI 0.4-0.8, $p < 0.01$), last clinic attendance > 1 month (OR 0.4, 95%CI 0.3-0.6, $p < 0.001$), frequent unavailability of drugs (OR 0.6, 95%CI 0.3-0.9, $p = 0.03$), running out of medication before the next appointment (OR 0.6, 95%CI 0.4-0.9, $p = 0.01$) and stopping medications when asymptomatic (OR 0.6, 95%CI 0.4-0.8, $p < 0.001$) to be independent associated factors for poor adherence.

Conclusions: A substantial proportion of hypertensive outpatients in this tertiary-level setting had a good adherence. Nonetheless, observed suboptimal blood pressure control regardless of a fairly satisfactory adherence rate suggests that lifestyle modification plays a central role in hypertension management. Furthermore, considering the high prevalence of modifiable lifestyle risk factors and the low awareness of such, it is pivotal for the routine clinical practice and health promotion programs to address medication adherence and lifestyle modification simultaneously.

Figure 1: Frequency and pattern of barriers towards medication adherence



Non-Communicable Disease Risk Factors among Caregivers of Patients Attending a Tertiary Cardiovascular Hospital in Tanzania

Pallangyo P^{1,2}, Komba M¹, Mkojera ZS¹, Mayala HA³, Bhalia SV², Millinga J⁴, Wibonela S⁴, Swai G⁴, Minja DA³, Janabi M²

¹Department of Research and Training, Jakaya Kikwete Cardiac Institute, Dar es Salaam, Tanzania

²Department of Cardiology, Jakaya Kikwete Cardiac Institute, Dar es Salaam, Tanzania

³Department of Clinical Support Services, Jakaya Kikwete Cardiac Institute, Dar es Salaam, Tanzania

⁴Department of Nursing, Jakaya Kikwete Cardiac Institute, Dar es Salaam, Tanzania

Address for Correspondence: Dr Pedro Pallangyo, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania. Email: pedro.pallangyo@gmail.com

Abstract

Background: Notwithstanding the ever-present burden of infectious diseases, sub Saharan Africa (SSA) region has experienced a 67% rise in the NCD burden in less than three decades. Furthermore, regardless of the increased recognition of NCDs threat in the region, reliable local estimates and associated drivers is generally lacking.

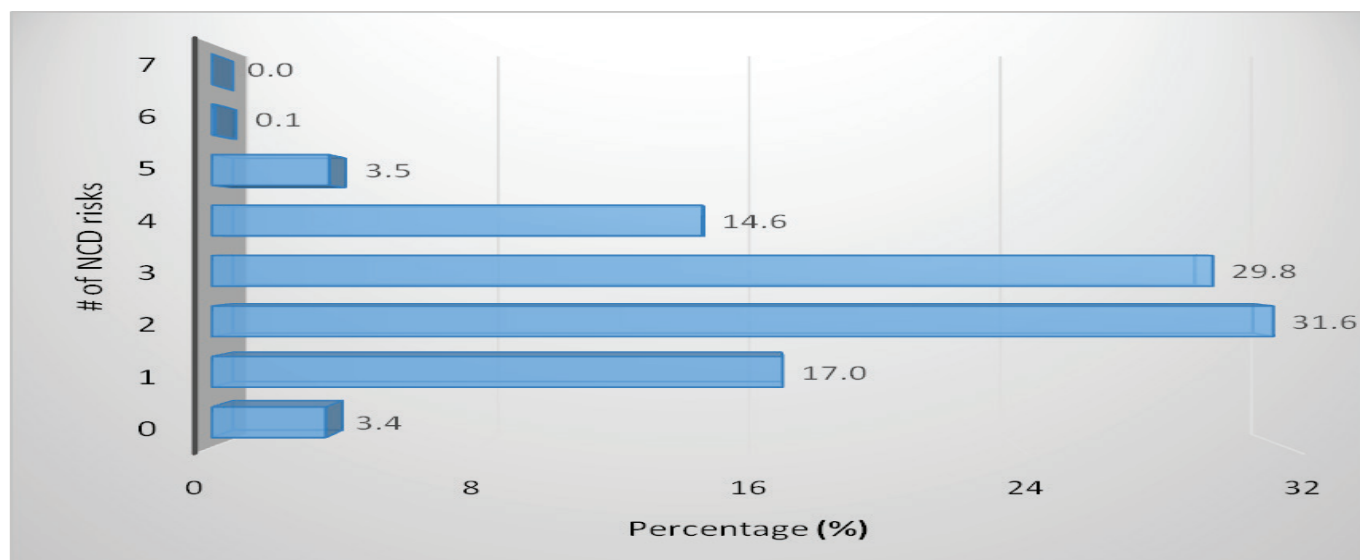
Objective: This cross-sectional study was conducted to establish the pattern and correlates of the modifiable NCD risk factors among caregivers of patients attending a tertiary cardiovascular centre in Tanzania.

Methods: A cross-sectional survey was conducted at Jakaya Kikwete Cardiac Institute, Dar es Salaam - Tanzania. We used a structured questionnaire bearing a modified WHO STEPwise Approach to NCD Risk Factor Surveillance (STEPS) tool to explore the modifiable behavioral and modifiable biological NCD risk factors.

Results: A total of 1063 caregivers were enrolled in this study. The mean age was 40.5 years and 55.7% were female. Nearly 80% of participants had a good knowledge regarding NCDs and 85.4% had a positive family history of NCDs. Overall, 1027 (96.6%) participants had at least one modifiable NCD risk factor while 510 (48.0%) had three or more (i.e. clustering). With respect to modifiable behavioral NCD risk factors, 34 (3.2%) were tobacco users, 56 (5.3%) had harmful alcohol consumption, 691 (65%) had unhealthy eating behavior, and 820 (77.1%) were physically inactive. Pertaining to modifiable biological NCD risk factors, 710 (66.8%) had excess body weight, 420 (39.5%) had hypertension and 62 (5.8%) were diabetic.

Conclusions: A vast majority of caregivers of NCD patients in this tertiary setting were found to have modifiable NCD risk factors with a strong tendency of clustering. These findings call for intensification of both population strategies and targeted group interventions for better control of the NCD menace and its correlates.

Figure 1: Proportion of participants by number of modifiable NCD risks



Burden and Correlates of Cognitive Impairment among Hypertensive Patients in Tanzania: A Cross-Sectional Study

Pallangyo P^{1,2}, Mkojera ZS¹, Komba M¹, Mgopa LR^{1,3}, Bhalia S², Mayala H⁴, Wibonela S⁵, Misidai N¹, Swai HJ¹, Millinga J^{1,5}, Chavala E^{1,5}, Kisenge PR², Janabi M²

¹Unit of Research, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

²Directorate of Cardiology, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

³Department of Psychiatry and Mental Health, Muhimbili University of Health and Allied Sciences, PO Box 65001, Dar es Salaam, Tanzania

⁴Directorate of Clinical Support Services, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

⁵Directorate of Nursing, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

Address for Correspondence: Dr Pedro Pallangyo, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania. Email: pedro.pallangyo@gmail.com

Abstract

Background: The evolution of cognitive impairment of vascular origin is increasingly becoming a prominent health threat particularly in this era where hypertension is the leading contributor of global disease burden and overall health loss. Hypertension is associated with the alteration of the cerebral microcirculation coupled by unfavorable vascular remodeling with consequential slowing of mental processing speed, reduced abstract reasoning, loss of linguistic abilities, and attention and memory deficits. Objective: Owing to the rapidly rising burden of hypertension in Tanzania, we sought to assess the prevalence and correlates of cognitive impairment among hypertensive patients attending a tertiary cardiovascular hospital in Tanzania.

Methodology: A hospital-based cross-sectional study was conducted at Jakaya Kikwete Cardiac Institute, a tertiary care public teaching hospital in Dar es Salaam, Tanzania between March 2020 and February 2021. A consecutive sampling method was utilized to recruit consented hypertensive outpatients during their scheduled clinic visit. General Practitioner Assessment of Cognition (GPCOG) Score was utilized in the assessment of cognitive functions. All statistical analyses utilized STATA v11.0 software. Pearson Chi square and Student's T-test were used to compare categorical and continuous variables respectively. Logistic regression analyses were used to assess for

factors associated with cognitive impairment. Odd ratios with 95% confidence intervals and p-values are reported. All tests were 2-sided and p<0.05 was used to denote a statistical significance.

Results: A total of 1201 hypertensive patients were enrolled in this study. The mean age was 58.1 years and females constituted nearly two-thirds of the study population. About three quarters had excess body weight, 16.6% had diabetes, 7.7% had history of stroke, 5.7% had heart failure, 16.7% had renal dysfunction, 53.7% had anaemia, 27.7% had hypertriglyceridemia, 38.5% had elevated LDL, and 2.4% were HIV-infected. Nearly two-thirds of participants had uncontrolled blood pressure and 8.7% had orthostatic hypotension. Overall, 524 (43.6%) of participants had cognitive impairment. During bivariate analysis in a logistic regression model of 16 characteristics, 14 parameters showed association with cognitive functions. However, after controlling for confounders, multivariate analysis revealed \leq primary education (OR 3.5, 95%CI 2.4-5.2, p<0.001), unemployed state (OR 1.7, 95%CI 1.2-2.6, p<0.01), rural habitation (OR 1.8, 95%CI 1.1-2.9, p=0.01) and renal dysfunction (OR 1.7, 95%CI 1.0-2.7, p= 0.04) to have independent association with cognitive impairment.

Conclusion: This present study underscore that cognitive decline is considerably prevalent among individuals with systemic hypertension. In view of this, it is pivotal to incorporate cognitive assessment in routine evaluation of hypertensive patients.

Table 1: Factors associated with cognitive impairment

Characteristic	Comparison	OR	95% CI	p - value	Adj.OR	95% CI	p - value
Age \geq 60 years	< 60 years	2.1	1.7-2.7	<0.001	1.3	0.8-1.9	0.26
Female	Male	1.5	1.2-1.9	0.001	1.2	0.8-1.8	0.51
\leq Primary Education	\geq Secondary education	3.5	2.7-4.5	<0.001	3.5	2.4-5.2	<0.001
Single/Divorced/Widowed	Married	1.8	1.4-2.3	<0.001	1.1	0.8-1.7	0.50
Unemployed/Retired	Self-employed/Employed	2.3	1.8-3.0	<0.001	1.7	1.2-2.6	<0.01
Rural	Urban	2.1	1.5-2.8	<0.001	1.8	1.1-2.9	0.01
Current alcohol drinker	Non drinker	0.7	0.6-0.9	<0.01	0.8	0.5-1.1	0.16
Inactive/underactive	Physically active	1.2	1.0-1.6	0.11	-	-	-
Socially inactive	Socially active	2.2	1.6-3.1	<0.001	1.1	0.7-1.8	0.72
Vision/hearing impairment	No impairment	1.3	1.0-1.6	0.05	1.3	0.9-1.8	0.20
History of stroke	No stroke	1.5	1.0-2.3	0.05	1.2	0.6-2.2	0.60
insomnia	Regular sleep	1.6	1.3-2.0	<0.001	1.2	0.9-1.8	0.25
Renal dysfunction	Normal renal functions	1.7	1.1-2.5	0.02	1.7	1.0-2.7	0.04
Diabetes mellitus	Diabetes-free	1.2	0.9-1.6	0.29	-	-	-
BMI \geq 25	BMI <25	0.7	0.5-0.9	<0.01	0.8	0.5-1.2	0.76
Postural hypotension	No postural hypotension	1.6	1.1-2.5	0.02	1.0	0.5-1.9	0.98

Obesity Epidemic in Urban Tanzania: A Public Health Calamity in an already Overwhelmed and Fragmented Health System

Pallangyo P^{1,2}, Mkojera ZS¹, Komba M¹, Swai HJ¹, Misidai N¹, Mayala H⁴, Bhalia S², Millinga J^{1,5}, Nkinda A¹, Matemu G¹, Faraji H¹, Janabi M²

¹Unit of Research, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

²Directorate of Cardiology, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

³Department of Psychiatry and Mental Health, Muhimbili University of Health and Allied Sciences, PO Box 65001, Dar es Salaam, Tanzania

⁴Directorate of Clinical Support Services, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

⁵Directorate of Nursing, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

Address for Correspondence: Dr Pedro Pallangyo, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania. Email: pedro.pallangyo@gmail.com

Abstract

Background: Worldwide, the epidemiological and demographic transitions have resulted in nutrition shift characterized by an increased consumption of high energy fast food products. In just over 3 decades, overweight and obesity rates have nearly tripled to currently affecting over a third of the global population. Notwithstanding the ever present under-nutrition burden, sub-Saharan Africa (SSA) is witnessing a drastic escalation of overweight and obesity.

Objective: The study aimed to explore the prevalence and associated factors for obesity among residents of Dar es Salaam city in Tanzania.

Methods: Participants from this study were recruited in a community screening conducted during the Dar es Salaam International Trade Fair. Sociodemographic and clinical data were gathered using a structured questionnaire during enrollment. Dietary habits and anthropometric measurements were assessed using standard methods. All statistical analyses utilized STATA v11.0 software. Pearson Chi square and Student's T-test were used to compare categorical and continuous variables respectively. Logistic regression analyses was used to assess for factors associated with BMI \geq 25. All tests were 2-sided and $p < 0.05$ was used to denote a statistical significance.

Results: A total of 6691 participants were enrolled. The mean age was 43.1 years and males constituted 54.2% of all participants. Over two-thirds of participants were alcohol consumers and 6.9% had a positive smoking history. Eighty eight point three percent of participants were physically inactive, 4.7% had a history of diabetes mellitus and 18.1% were known to have elevated blood pressure. Overweight and obesity were observed in 34.8% and 32.4% of participants respectively. Among overweight and obese participants, 32.8% had a misperception of having a healthy weight. Age \geq 40 years, female gender, a current working status, habitual breakfast skipping, poor water intake, high soft drink consumption, regular fast food intake, low vegetable and fruit consumption, alcohol consumption and hypertension were found to be independent associated factors for obesity.

Conclusion: Amidst the ever present undernutrition in SSA, a significant proportion of participants had excess body weight. Concomitantly, the rates of physical inactivity and unhealthy eating are disproportionately high in Dar es Salaam. In view of this, community-based and multilevel public health strategies to promote and maintain healthy eating and physical activity require an urgent step-up in urban Tanzania.

Table 1: Associated factors for excessive body weight

Characteristic	Comparative	OR	95% CI	P-value	Adj.OR	95% CI	P-value
Age ≥40	Age<40	3.0	2.7-3.3	<0.001	2.3	1.8-3.0	<0.001
Female	Male	1.5	1.4-1.7	<0.001	1.8	1.4-2.3	<0.001
≤ Primary education	≥ Secondary education	1.3	1.1-1.4	<0.001	1.2	0.9-1.5	0.27
Currently working	Unemployed	1.5	1.3-1.7	<0.001	1.8	1.4-2.5	<0.001
Inactive	Active	1.2	1.1-1.4	<0.01	1.4	0.97-2.0	0.07
Often skips breakfast (≥ 4days/week)	Regular takers (<4days)	1.7	1.5-1.9	<0.001	1.6	1.3-2.1	<0.001
Water intake <2L/day	Intake ≥2L/day	22.4	19.2- 26.1	<0.001	24.2	18.4-31.7	<0.001
Soft drinks intake >2days /week	≤2days/week	67.0	57.0- 78.7	<0.001	75.1	57.6-98.0	<0.001
Fast food intake >2days/week	≤2days/week	9.9	8.8-11.1	<0.001	11.2	8.8-14.4	<0.001
Vegetables & fruits intake ≤4days/ week	>4days/week	11.9	10.4- 13.7	<0.001	10.1	7.7-13.3	<0.001
Positive alcohol history	Non-drinkers	1.5	1.3-1.6	<0.001	1.7	1.3-2.2	<0.001
Positive history of hypertension	Negative history	2.2	1.9-2.6	<0.001	1.2	0.9-1.7	0.30
Elevated BP	Normal BP	2.2	1.9-2.4	<0.001	1.3	1.0-1.7	<0.05

A Case of Spontaneous Recanalization Following Subtotal Proximal-LAD Occlusion: Nature or Witchcraft?

Pallangyo P^{1,2}, Longopa G², Meda JR^{3,4}, Mayala HA⁵, Bhalia S², Mkojera ZS¹, Komba M¹, Millinga J⁶, Wibonela S⁶, Kisenge PR^{1,2}, Janabi M²

¹Department of Research & Training, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

²Department of Cardiology, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

³Department of Internal Medicine, University of Dodoma, PO Box 259, Dodoma, Tanzania

⁴Department of Internal Medicine, Benjamin Mkapa Hospital, PO Box 11088, Dodoma, Tanzania

⁵Department of Clinical Support Services, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

⁶Department of Nursing, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

Address for Correspondence: Dr Pedro Pallangyo, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania. Email: pedro.pallangyo@gmail.com

Abstract

Background: Owing to the activation of the endogenous fibrinolytic system, spontaneous restoration of coronary blood flow in the infarcted artery may seldom occur without thrombolysis or Primary Coronary Intervention (PCI). Spontaneous reperfusion is associated with less myocardial damage, a tremendous in-hospital outcome, and a better overall prognosis compared to patients requiring reperfusion therapy to achieve a TIMI-3 patency.

Objective: We present an intriguing case of spontaneous recanalization succeeding a subtotal Left Anterior Descending (LAD) occlusion in a 46 year old male from Tanzania with neither positive history of cardiovascular disease nor apparent Coronary Artery Disease (CAD) risk.

Case presentation: A 46-year-old man of African origin was referred from central Tanzania (443 km away) for revascularization. He had presented with a 2-day history of ongoing central chest pain, crushing in nature and radiating to the left arm. His past medical history was uneventful and had no apparent risk factors for CAD. Cardiac markers were found to be elevated while electrocardiographic and echocardiographic evaluation revealed features in keeping with anterior wall MI. He was prescribed the standard precatheterization medications and subsequently underwent an urgent Coronary Angiography (CAG). Catheterization revealed a subtotal occlusion of

the proximal LAD with a TIMI-1 flow. Due to intra-procedural machine fault and lack of technical support, Percutaneous Coronary Intervention (PCI) couldn't be done in the same setting and the patient was referred to Jakaya Kikwete Cardiac Institute (JKCI) for revascularization. The patient continued to be symptomatic for 5 days post catheterization but came to JKCI free from symptoms on the 9th day since onset of chest pain. He had stable hemodynamics and was in Killip class I. Cardioselective enzymes, a 12-lead ECG and 2D-ECHO done at this point revealed essentially normal findings but the patient underwent a second catheterization for revascularization of a tight proximal LAD lesion. Unexpectedly, CAG revealed a patent LAD vessel. Based on the clinical presentation, cardiac markers, electrocardiographic and angiographic evolution, a diagnosis of spontaneous recanalization following subtotal proximal-LAD occlusion was entertained.

Conclusions: Spontaneous recanalization in patients with significant coronary lesions may seldom occur and portend a favorable prognosis. In light of the increasing incidence of ACS in SSA, it is crucial for primary physicians to recognize this potentially fatal entity timely and offer or refer for appropriate reperfusion therapy promptly. Parallel to this, efforts to raise public awareness, improve health-seeking behaviors, and strengthen emergency services are of utmost importance.

Secutril-VT

50 | 100 | 200

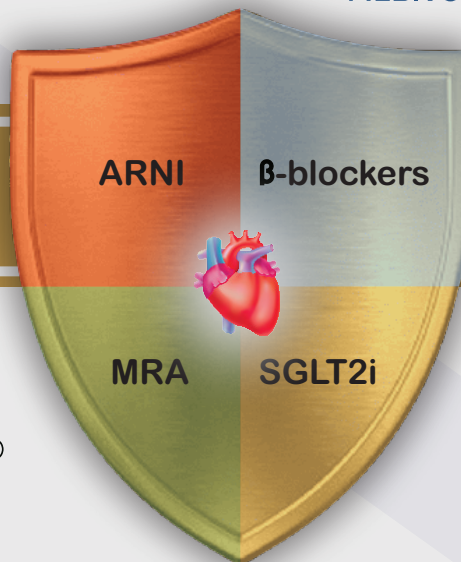
Sacubitril 24/49/97 mg
+ Valsartan 26/51/103 mg tablets

NEBIVAS

5/10

NEBIVOLOL TABLETS 5 MG/10 MG

THE GIANT



SHIELD APPROACH

EP-life[®]

25 / 50

Eplerenone 25/50 mg tablets

Dapazin[®]

5/10

Dapagliflozin 5 & 10 mg tablets



*Healthier...
Happier...
Living with
heart failure*

The most comprehensive range of the 4th
generation CCB Cilnidipine combinations

CILNEED 5

Cilnidipine 5 mg tablets

CILNEED 10

Cilnidipine 10 mg tablets

Single drug monotherapy

Cilneed[®] 10 CT

Cilnidipine 10 mg + Chlorthalidone
12.5 mg tablets

Cilneed[®] 20 CT

Cilnidipine 20 mg + Chlorthalidone
12.5 mg tablets

Cilnitel[®] 10/40

Cilnidipine 10 mg + Telmisartan 40
mg tablets

Cilnitel[®] 10/80

Cilnidipine 10 mg + Telmisartan 80
mg tablets

Cilneb 10/5

Cilnidipine 10 mg +
Nebivolol 5 mg tablets

2 drug combination

Cilnitel 5/40 CT

Cilnidipine 5 mg + Telmisartan 40 mg +
Chlorthalidone 12.5 mg tablets

Cilnitel 5/80 CT

Cilnidipine 5 mg + Telmisartan 80 mg +
Chlorthalidone 12.5 mg tablets

Cilnitel 40 CT

Cilnidipine 10 mg + Telmisartan 40 mg +
Chlorthalidone 12.5 mg tablets

Cilnitel 80 CT

Cilnidipine 10 mg + Telmisartan 80 mg +
Chlorthalidone 12.5 mg tablets

3 drug combination

CONTENTS

ORAL PRESENTATIONS

Reduction aortoplasty: Kenyan experience <i>Ponoth P</i>	S27
Non-cardiac comorbidities among heart failure patients <i>Bikoro M</i>	S28
Hypercholesterolemia among young individuals tested at a private laboratory <i>Munoko AN</i>	S29
Role of limited transthoracic approach to mitral balloon valvulotomy for critical mitral stenosis <i>Leta AF, White RE</i>	S30
“Florida Sleeve” Aortic Root Repair: Two Cases from the Year 2022 <i>Jamal I, Ogutu P, Duncan A</i>	S31
Takayasu arteritis mistaken for epilepsy: a case presenting with convulsive syncope <i>Pallangyo P, Misidai N, Hemed NR, Swai HJ, Mkojera Z, Bhalia S, Lyimo F, Millinga J, Wibonela SA, Janabi M</i>	S32
Magnitude of selected cardiovascular diseases in Kenya: a retrospective data review 2018-2020 <i>Mbau L</i>	S33
Very late infected pacemaker device – more than 2 years, with markers of local infection <i>Akwano C</i>	S34
Diagnostic Utility of Red Cell Indices in Relation to Serum Iron Indices for Evaluation of Iron Deficiency in Heart Failure <i>Mburu LW, Mwirigi A, Jeilan M</i>	S35

Reduction Aortoplasty: Kenyan Experience

Ponoth P

The Karen Hospital, Nairobi, Kenya

Address for Correspondence: Dr Premanand Ponoth. Email: pponoth@gmail.com

Abstract

Background: Reduction aortoplasty is a known procedure in aortic dilatation and ectasia and could be used in patients with multiple comorbidities while doing Aortic Valve Replacement (AVR), instead of a Bentall procedure. We share a limited experience at Karen Hospital with short term follow up.

Materials and methods: Between 2020 and 2022 (15 months) three patients underwent longitudinal reduction aortoplasty along with AVR. There was minimal annulo aortic dilatation. The mean ascending aortic dilatation was $5.6 \pm .5$ cm. Age varied from 73 to 55 years, EF was between 48-55%. The associated comorbidities being HT, DM, dialyzed and hypertrophic

LV. One patient had CRF. The aorta was repaired with double layers with 4/0 proline with reinforced Dacron strip. All patients did well and were discharged on the 7th post-operative day.

Results: All the patients did well and are on regular follow up. All patients had AVR with mechanical valve along with aortoplasty. The aortic diameter came down to $4 \text{ cm} \pm .3 \text{ cm}$. There was no complication of bleeding, dissection or dilatation in any of these patients.

Conclusion: Reduction aortoplasty is an acceptable and safe procedure more so if the patient has multiple morbidities so as to avoid elaborate procedure like Bentall.

Non-Cardiac Comorbidities among Heart Failure Patients

Bikoro M

Moi Teaching and Referral Hospital, Eldoret, Kenya

Address for Correspondence: Dr Maureen Bikoro. Email: maureenbikoro@yahoo.com

Abstract

Background: Non-Cardiac Comorbidities (NCC), defined as additional non-cardiac diseases co-existing with Heart Failure (HF), have been independently associated with acceleration of disease progression, poor response to treatment, mortality, hospitalization, re-hospitalization rates, poor health related quality of life and early disability. Despite use of novel therapies in HF, which focus on improvement of cardiovascular status, there has been minimal improvement in outcomes which may partly be attributed to combined effect of NCC.

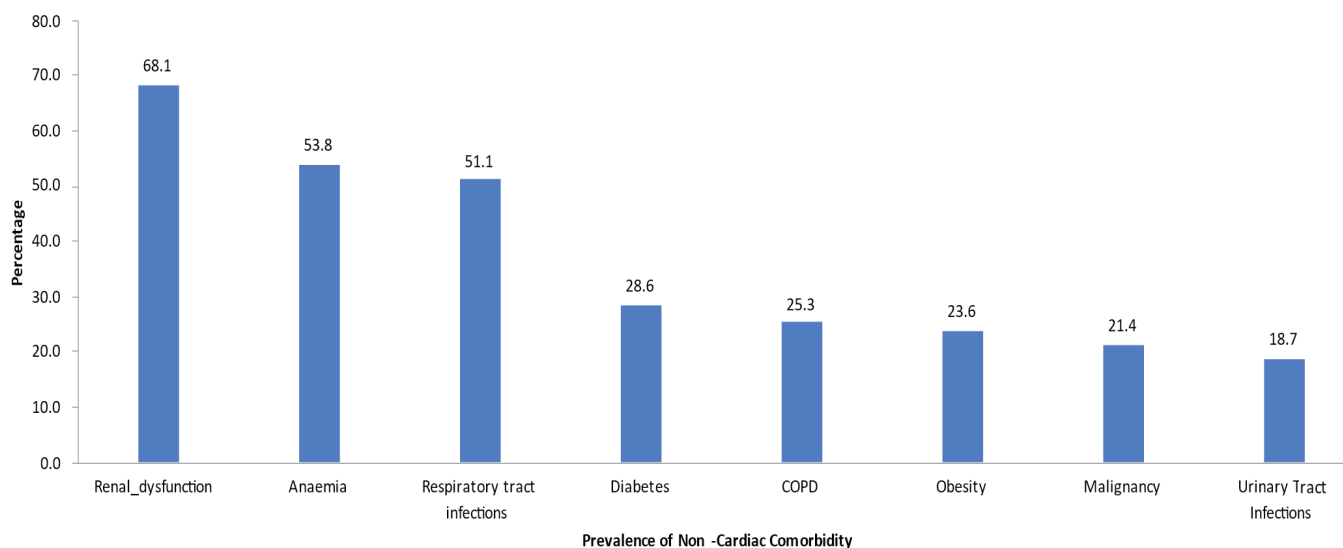
Methods: Cross-sectional study design that recruited 182 participants through consecutive sampling. An interviewer administered structured questionnaire was used to obtain participants demographic characteristics while data on NCC were abstracted from patient files and additional tests of FBS, HbA1C, eGFR, urinalysis, urine and sputum cultures were performed. Chi-square, fishers exact and logistic

regression analyses were performed to test for association between NCC, HF phenotypes and demographic characteristics.

Results: Out of the 182 participants, 57.7% were female, 60.4% were less than 65 years of age, 46.7% were in NYHA class IV, 57.7% had *de novo* HF and 65.9% had HFpEF. The NCC prevalence is represented in Figure 1 below. HFpEF was significantly associated with COPD (31.7%, $p = 0.006$) and malignancy (28.3%, $p = 0.009$). On logistic regression, younger age had decreased odds of association with DM (0.27, CI 0.08, 0.83) and renal dysfunction (0.17, CI 0.06, 0.45) whereas male sex had increased odds of association with renal dysfunction (2.72, CI 1.29, 6.04) and RTIs (3.09, CI 1.59, 6.18).

Conclusions: There is a high burden of NCC in patients hospitalized with HF at Moi Teaching and Referral Hospital (MTRH). Renal dysfunction, anaemia and RTIs were most prevalent with elderly male patients being worst affected. HFpEF had increased burden of COPD and malignancy.

Figure 1: Prevalence of NCC



Hypercholesterolemia among Young Individuals Tested at a Private Laboratory

Munoko AN

Pathologists Lancet Kenya

Address for Correspondence: Email: Dr Angela N Munoko. Angela.Munoko@lancet.co.ke

Abstract

Background: Coronary heart disease is a silent disease, heralded by fatty streaks that have been reported to occur as early as childhood. Some studies have reported high prevalence of advanced atherosclerotic plaques in young individuals on post-mortems. Low Density Lipoprotein Cholesterol (LDL-C) is an important risk factor in the development of Atherosclerotic Cardiovascular Disease (ASCVD). The American Heart Association recommends statin therapy for LDL-C levels ≥ 4.1 mmol/L in individuals aged ≤ 39 years as a primary preventive measure.

Methods: This was a retrospective study. Data were extracted from the laboratory information system and data entry and analysis carried out on MS Excel. The study excluded individuals without data on age or sex. Only the single, earliest LDL-C result per individual was included. Data included LDL-C, triglycerides, and any result on glycaemic state (either fasting blood sugar, random blood sugar or HBA1C). The cut-off for LDL-C was ≥ 3 mmol/L.

Results: The proportion of individuals with hypercholesterolemia aged less than 40 years was 17.9% (1,238 / 6928). There was statistically significant higher LDL-C among children and adolescents than in the other groups ($p = 0.01$). LDL-C was similarly higher among those aged ≥ 40 years compared to those aged

under 40 years ($p = 0.04$). The proportion of young individuals with LDL-C of ≥ 4.1 mmol/L was 26.7% (330/1238). In this sub-population, the proportion with hypertriglyceridemia requiring intervention (≥ 2 mmol/L) was 24.2% (80/330). Only 56.7% of young individuals had a laboratory result on glycaemic state; the proportion with results in the diabetic range was 14.9% (Table 1).

Table 1: Comparison of LDL-C by age

Comparison of those less than 40					
Groups	Count	Sum	Average	Variance	P value
0 - 19 (years)	17	75.2	4.42353	6.48816	
20 - 29 (years)	178	671.2	3.77079	0.72084	0.01
30 - 39 (years)	1044	3950	3.78352	0.66416	
Comparison of LDL-C between those ≥ 40 years and those ≤ 39 years					
≤ 39 (years)	1238	4696.4	3.79048	0.75206	
≥ 40 (years)	5690	21844.1	3.83903	0.55522	0.04

Conclusion: The study found a significant proportion of young individuals with hypercholesterolemia and additional cardiovascular risk factors (diabetes and hypertriglyceridemia). Children and adolescents had significantly higher LDL-C suggestive of familial dyslipidemias.

Role of Limited Transthoracic Approach to Mitral Balloon Valvulotomy for Critical Mitral Stenosis

Leta AF, White RE

Tenwek Mission Hospital, Bomet, Kenya

Address for Correspondence: Dr Arega F Leta. Email: draregafekadu@gmail.com

Abstract

Background: Percutaneous Mitral Balloon Valvulotomy (PMBV) is an established procedure in selected patient populations with critical mitral stenosis. However this procedure is very resource intensive, and above all has a steep learning curve. Three limited trans-thoracic approach mitral balloon valvulotomies for patients with severely decompensated heart failure secondary to critical mitral stenosis were successfully performed.

Cases presentation: *Case 1* - A 27 year-old immediate post-partum mother diagnosed with low cardiac output syndrome secondary to critical mitral stenosis. *Case 2* - A 42 year-old male diagnosed with low cardiac output syndrome, multiple organ failure secondary to

critical mitral stenosis. *Case 3* - A 16 year-old female diagnosed with decompensated heart failure and failed medical management secondary to critical mitral stenosis. We used a limited 3-4 cm incision in the 3rd or 4th antero-lateral left intercostal space and 2-3cm pericardiotomy to access the left atrial appendage and under transesophageal echocardiogram guidance successfully performed Mitral Balloon Valvulotomy (MBV).

Conclusion: In patients with severely decompensated heart failure and multi-organ dysfunction secondary to critical mitral stenosis with very high risk for cardiopulmonary bypass where PMBV is not available, Limited Trans-thoracic Mitral Balloon Valvulotomy (LTMBV) can be a viable option.

“Florida Sleeve” Aortic Root Repair: Two Cases from the Year 2022

Jamal I, Ogutu P, Duncan A

Cardiac Surgery, Aga Khan University Hospital Nairobi, Kenya

Address for Correspondence: Dr Andrew Duncan. Email: andrew.duncan@aku.edu

Abstract

Background: Root repair with an external Dacron graft anchored to the sub-annular LV outflow with slits for the coronary arteries is a simplified reconstruction with valve-sparing capability (VSRR). It stabilizes the annulus, reduces the sinus dimension and contains the sino-tubular junction.

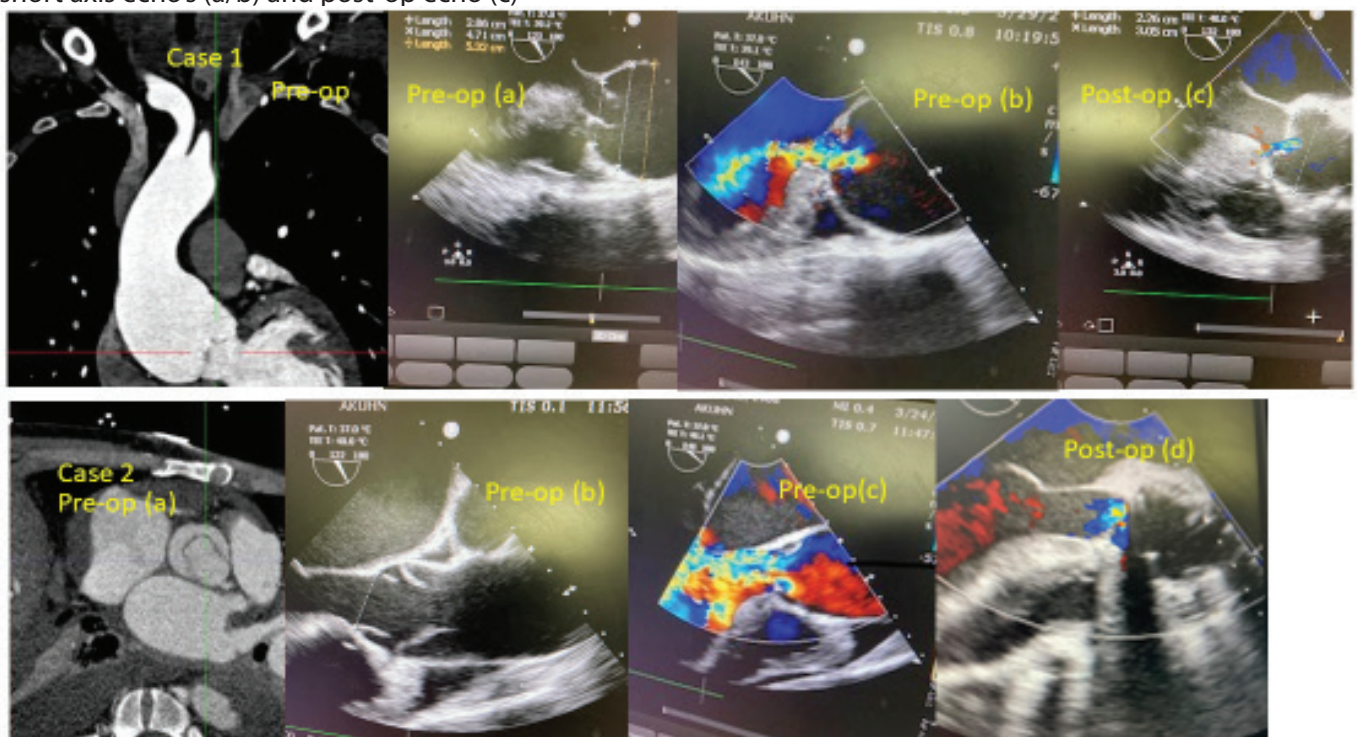
Case presentation: *Case 1* was a 42-year-old female post renal transplant with annulo-aortic ectasia and aortic root dilatation to 54mm with moderate central AR (1a/b). She underwent root wrapping with a 30mm graft. Slits were cut for the coronary arteries. The aortic valve was re-suspended with single supra-commissural sutures. The proximal graft was fixed to the annulus with six sutures placed from inside to out below the native valve insertion. TOE showed normal root dimensions and minimal eccentric regurgitation (1c).

Case 2 was a 53-year-old male transferred intubated with a delayed diagnosis of Type A dissection (10 days) with severe AR, cardiac, respiratory and renal failure

requiring dialysis. He underwent emergency repair (EuroSCORE 2 49.5%). The root was dissected down to the annulus and around the coronary origins with a tear in proximal aorta (2a/b/c). The dissected layers in the root were re-apposed with glue. A 34mm graft was used for sleeve repair. The STJ suture line was completed with an internal ring of Teflon sandwiching the repaired aortic layers between it and the external graft. Mechanical aortic valve replacement was performed (2d). The ascending and proximal arch were repaired with open hemi-arch anastomosis at 30°C with right axillary cerebral perfusion. The patient was discharged well and dialysis free three weeks later.

Conclusion: This simple technique can be used as a valve-sparing option for aortic root aneurysms with valve dysfunction. It is also applicable for emergency root repair in type A dissection where apposition of dissected layers against the external support graft reduces bleeding seen with the traditional glued repair or the modified Bentall /VSRR procedure with fragile dissected coronary buttons.

Figure 1: Upper panel is patient 1 with root aneurysm and moderate regurgitation showing pre-op CT and short axis echo's (a/b) and post-op echo (c). Lower panel is patient 2 with type A dissection showing pre-op axial CT and short axis echo's (a/b) and post-op echo (c)



Takayasu Arteritis mistaken for Epilepsy: A Case Presenting with Convulsive Syncope

Pallangyo P^{1,2}, Misidai N¹, Hemed NR¹, Swai HJ¹, Mkojera Z¹, Bhalia S², Lyimo F³, Millinga J⁴, Wibonela SA⁴, Janabi M²

¹Department of Research and Training, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

²Department of Cardiology, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

³Department of Radiology, Muhimbili National Hospital, PO Box 65000, Dar es Salaam, Tanzania

⁴Department of Nursing, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania

Address for Correspondence: Dr Pedro Pallangyo, Department of Research and Training, Jakaya Kikwete Cardiac Institute, PO Box 65141, Dar es Salaam, Tanzania. Email: pedro.pallangyo@gmail.com

Abstract

Background: Takayasu arteritis is a chronic inflammatory disease characterized by granulomatous vasculitis that predominantly manifests as aortoarteritis. This occlusive thromboarteriopathy lacks pathognomonic features often resulting in a diagnostic dilemma leading to its under-recognition, misdiagnosis, and delayed management. Although neurological manifestations are not uncommon in Takayasu arteritis, convulsive syncope as an initial clinical presentation is extremely rare. A case of convulsive syncope as a manifesting symptom of Takayasu arteritis in a 17-year-old male of African origin is reported.

Case presentation: A 17-year-old male was referred to us from an upcountry regional hospital with a diagnosis of medically intractable epilepsy for cardiovascular review. He presented with a 28-week history of generalized tonic-clonic seizures followed by loss of consciousness. He denied history of recurrent headaches, fever, visual disturbances, arthralgias, claudication or unintentional weight loss. Physical examination revealed feeble left-sided brachial and

radial pulses, elevated blood pressure, differences in blood pressure between arms and left-sided carotid and vertebral bruits. Computed Tomography Angiogram (CTA) of his thoracic and abdominal aorta revealed changes suggestive of a diffuse arteritis. Additionally, Magnetic Resonance Angiogram (MRA) of the brain revealed total occlusion of the left common carotid, left internal carotid, left external carotid and left vertebral arteries. Based on the physical examination and radiological findings, we reached a diagnosis of Takayasu arteritis. He was prescribed dexamethasone, methotrexate, acetylsalicylic acid and amlodipine. He had a remarkable recovery and was seizure-free one month post discharge.

Conclusions: Takayasu arteritis may manifest with convulsive syncope mimicking epilepsy. Despite of its rarity, presentations of this nature continue to challenge clinicians resulting in delayed diagnosis with irreversible life-threatening consequences to patients. In view of this, physicians should strive to take detailed history and perform thorough physical examination so as to timely pick the characteristic signs of Takayasu arteritis especially in patients presenting with unanticipated symptoms.

Magnitude of Selected Cardiovascular Diseases in Kenya: A Retrospective Data Review, 2018-2020

Mbau L

Kenya Cardiac Society

Address for Correspondence: Dr Lilian Mbau. Email: lilian.mbau@gmail.com

Abstract

Background: Cardiovascular Diseases (CVDs) contribute up to 25% of hospital admissions in Kenya. These diseases are costly to diagnose and manage and access to quality and affordable care remains a challenge. Data on the burden of these conditions remains limited making it difficult for decision makers to appreciate the magnitude of the problem.

Objective: The aim of the study was to determine the magnitude, patients' characteristics and outcomes of selected CVDs in selected hospitals in Kenya between January 2018 and December 2020.

Methods: A retrospective study was conducted where records of patients with CVDs (aortic disease, peripheral arterial diseases, venous thromboembolism, heart failure, coronary heart disease, stroke, rheumatic heart disease, chronic venous insufficiency and congenital heart disease) accessing services at selected public, faith-based and private hospitals between 2018 and 2020 were reviewed. Data was collected using a digital data abstraction form. Univariate and bivariate

analysis was done to describe the demographic profile of the patients and their outcomes.

Results: A total of 19 health facilities participated where 11,645 records were reviewed, majority from public hospitals (76%). Female comprised 54% and 73.4% were aged above 50 years. Majority of the patients had heart failure, 4856 (41.7%). Other common CVDs were stroke (3038, 26.1%), rheumatic heart disease (1028, 8.8%), venous thromboembolism (987, 8.5%), congenital heart disease (650, 5.6%) and ischemic heart disease (605, 5.2%). Hypertension was the most common comorbidity and risk factor. Majority of patients admitted were alive at discharge (73.7%) and 40.6% followed up at the outpatient clinics were active on follow-up.

Conclusion: Heart failure and stroke remain the most common CVDs in Kenya. Age and hypertension are major risk factors. Hypertension prevention and management should be prioritized to reduce the burden of CVDs. Tools to routinely collect CVD data should be developed to better understand the burden.

Very Late Infected Pacemaker Device – More Than 2 Years, With Markers of Local Infection

Akwanalo C

Moi Teaching and Referral Hospital, Eldoret, Kenya

Address for Correspondence: Dr C Akwanalo. Email: cakwanalo@gmail.com

Abstract

Background: Cardiac Implantable Electronic Devices (CIED) infections usually occur in the first 60 days, with late infections being very rare, affecting between 0.1 -7% of the cases from different series. As we increasingly implant pacemakers, we expect an increase in rates of complications, especially in patients with co-morbidities and immunosuppression. We report a case of pacemaker pocket infection occurring more than 2 years post implantation in an immunocompetent patient.

Case report: A 73-year-old hypertensive woman with complete heart block required a pacemaker 2 and half years. After successful implantation, subsequent follow up was uneventful, with good compliance to her annual visits. She presented in March 2022 with a left pectoral non-tender mass that developed over 2-3 weeks. She denied history of recent fever, night sweats, trauma, or infection in the other parts of the body. Her hemogram was normal, with slight elevation of infection markers, suggestive of a local infection. Echo was negative for endocardial involvement. An

elective pacemaker revision and pocket exploration led to the drainage of 200 cc of purulent, non-smelly discharge from the pocket, after peri-procedural prophylaxis with cefazolin. Pus and wound cultures, ZN and fungal cultures were negative. She underwent complete removal of the pacemaker system and put on intravenous antibiotics for seven days, while on a temporary pacemaker. Re-insertion of a dual pacemaker was done on the contralateral side after normalization of her PCT on day 8. She is doing well 3 months down the line, with normal laboratory tests.

Conclusions: Most CIED infections occur in the first 60-90 days, and are caused by bacteria (*staph. aureus*). Pace marker pocket infections with negative cultures accounts for about 4% of the cases, most likely due to fungal or mycobacterium, especially in immunocompromised states like diabetes mellitus or with minimal improvement on antibiotics. Appropriate treatment should include immediate initiation of antibiotics and removal of the CIED. It is still unclear why an immunocompetent hypertensive patient developed a culture negative pocket infection more than 2 years after implantation.

Diagnostic Utility of Red Cell Indices in Relation to Serum Iron Indices for Evaluation of Iron Deficiency in Heart Failure

Mburu LW¹, Mwirigi A², Jeilan M³

¹Resident, Department of Medicine, Aga Khan University Hospital Nairobi, Kenya

²Consultant Haemat-oncologist, Department of Haematology and Oncology, Aga Khan University Hospital Nairobi, Kenya

³Consultant Interventional Cardiologist, Department of Medicine, Aga Khan University Hospital Nairobi, Kenya

Address for Correspondence: Dr Larry Mburu, Department of Medicine, Aga Khan University Hospital Nairobi, Kenya. Email: larrymburu@gmail.com

Abstract

Background: Iron Deficiency (ID) in Heart Failure (HF) causes poorer outcomes. The Red Cell Indices (RCIs), while useful in predicting HF outcomes, have not been evaluated relative to the iron indices, ferritin and transferrin saturation (TSAT), in this population for prediction of ID.

Objective: This study aimed to evaluate the sensitivity and specificity of the RCIs relative to iron indices for ID in HF patients. This would improve evaluation of ID in low-resource settings.

Methods: This was a diagnostic cross-sectional prospective study set in Aga Khan University Hospital. One hundred and forty-five patients above 18 years old with HF were sampled consecutively. Data collected included demographics, functional status, RCIs from a haemogram, ferritin levels and TSAT. Sensitivity and specificity analysis, and Receiver Operating Characteristics (ROC) curves, were performed for the RCIs. Medians and interquartile ranges were

calculated for continuous variables and prevalence was reported as percentages or Odds Ratios (ORs) and their Confidence Intervals (95% CI).

Results: Male-to-female ratio was 1.2:1. Median age was 67.0 (range 20.0-96.0 years). The prevalence of ID was 61.4% (95% CI 53.0-69.4%). ID was more common in females (OR 2.3 [95% CI 1.1-4.7]), non-Heart Failure with reduced Ejection Fraction (non-HFrEF) forms (OR 3.0 [95% CI 1.3-6.7]), more symptomatic patients (OR 4.0 [95% CI 1.8-8.9 for NYHA II-IV vs. NYHA I patients), and overweight/obese patients (OR 1.1 [95% CI 1.0-1.2] per unit increase in body-mass index). The RCIs had Areas-Under-the-Curve (AUCs) of 0.59-0.69 on ROC analysis. RDW had specificity of 96.4% (95%CI 87.7-99.6%). A combination of RDW \geq 18%, OR RDW $<$ 18% and TSAT $<$ 20% had sensitivity of 92.1% and specificity of 67.3%.

Conclusion: ID is common in HF patients, and RDW screening prior to TSAT testing may reduce the need to test all patients with TSAT and ferritin, hence reducing the cost burden to HF patients.

Table 1: Diagnostic characteristics of the red cell indices in comparison to the reference standard

RCI	AUC (95% CI)	p-value	Cut-off	SN (%)	SP (%)	YI (%)	LR+	LR-
MCHC (g/dL)	0.69 (0.60 – 0.78)	<0.001	<33.0	56.2 (45.3 – 66.7)	76.8 (63.6 – 87.0)	33.0	2.4 (1.5 – 4.0)	0.6 (0.4 – 0.8)
MCH (pg)	0.67 (0.58 – 0.76)	<0.001	<29.5	73.0 (62.6 – 81.9)	58.9 (45.0 – 71.9)	32.0	1.8 (1.3 – 2.5)	0.5 (0.3 – 0.7)
Hb (g/L)	0.65 (0.55 – 0.74)	0.003	<13.4	61.8 (50.9 – 71.9)	67.9 (54.0 – 79.7)	29.7	1.9 (1.3 – 2.9)	0.6 (0.4-0.8)
CCI	0.66 (0.57 – 0.75)	0.002	>54.15	69.7 (59.0 – 79.0)	58.9 (45.0 – 71.9)	28.6	1.7 (1.2 – 2.4)	0.5 (0.4 – 0.8)
RDW (%)	0.62 (0.53 – 0.71)	0.016	\geq 18.0	24.7 (16.2 – 35.0)	96.4 (87.7 – 99.6)	21.1	6.9 (1.7 – 28.3)	0.8 (0.7 – 0.9)
MCV (fL)	0.59 (0.50 – 0.68)	0.071	<83.0	40.4 (30.1 – 51.4)	80.4 (67.6 – 89.8)	20.8	2.1 (1.2 – 3.7)	0.7 (0.6-0.9)
TSAT (%)	0.89 (0.83 – 0.94)	<0.001	<20.0	95.5 (88.9 – 98.8)	70.9 (57.1 – 82.4)	66.4	3.3 (2.2 – 5.0)	0.1 (0.0 – 0.2)
Ferritin (ng/mL)	0.91 (0.87 – 0.96)	<0.001	<136.0	71.9 (61.4 – 80.9)	91.1 (80.4 – 97.0)	63.0	8.1 (3.5 – 18.8)	0.3 (0.2 – 0.4)

AUC = area under the curve; SN = sensitivity; SP = specificity

Instructions to authors

The *Journal of Kenya Association of Physicians (JOKAP)* is a quarterly journal published by the Kenya Association of Physicians.

Authors submitting manuscripts to JOKAP do so on the understanding that if accepted they surrender all copyright to the journal. No part of this journal may be reproduced or transmitted in any form without the written permission of the Editor-in-Chief.

The following categories of manuscripts will be considered for publication;

- i. Original articles:** The article must contribute further to the existing knowledge of the subject. This must follow the IMRAD format with the following sub-headings: Title; Structured abstract with the following sub-titles; background, objective(s), study design, methods, results and conclusion(s); Introduction; Materials and Methods; Results; Discussion; Conclusion(s), Recommendations (if any) and References (not exceeding 25). The article should not exceed 4000 words including text, figures, tables and references.
- ii. Reviews:** This must be a critical analyses of the subject reviewed. Reviews should preferably be written by an expert in that particular area and can be commissioned by the Editor-in-Chief. Reviews should not exceed 6000 words including tables, figures and references. The format should be as follows; title, structured abstract (with the following sub-headings; objective(s); data source, conclusions), Introduction and sub headings where necessary, results and conclusion(s) and references not exceeding 40.
- iii. Case reports:** This should be unique clinical syndromes or presentations. They should not exceed 2500 words. The format should be a Title, Abstract (prose form) not exceeding 200 words, Introduction, Case report, Discussion, Acknowledgement(s) and references not exceeding 15.
- iv. Short communication:** This should possess all the elements of a scientific paper but should be presented in prose form without sub-headings. It should have not more than 1500 words and 10 references.

Note that references should be numbered in order of appearance (Vancouver style) and strictly only those cited in the text should appear in the reference list.

All manuscripts should be submitted to the Editor-in-Chief, Prof. Omondi Oyoo, email: jokapkenya@gmail.com

Committed to Cardiology

INNOCIA
LIFESCIENCES

is helping doctors achieve better clinical outcomes with innovative range of cardiovascular therapies.

Highly
affordable

Globally
accepted
therapies

Quality as per
International
standards

Wide range of
dosing
combinations



**A new Star in Oral
Anti-coagulants in born**

PIXAN

Apixaban 2.5/5 mg tablets



**Reduces risk
of stroke¹**

**Treats DVT/PE
safely²**

**Lesser major
bleeding risk³**

***AT HIGHLY AFFORDABLE PRICES
TO PATIENTS***