

Research Article

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[Associations of arterial stiffness with left ventricular mass index and carotid intima-media thickness in the hypertensives](#)

Background: Arterial stiffness has been considered an independent predictor of cardiovascular disease in addition to the traditionally known cardiovascular risk factors.

Objectives: This study aimed to investigate the associations between arterial stiffness with left ventricular mass index and carotid intima-media thickness in the hypertensives.

Methods: A descriptive cross-sectional study compared a control group in 210 study subjects (105 hypertensives and 105 normotensives). Measuring left ventricular mass index by echocardiography and carotid intima-media thickness by carotid doppler ultrasonography. Pulse wave velocity was measured using the Agedio B900 device and the Agedio K520 application. The manual method was measured by the ankle-brachial index.

Results: There was a statistically significant positive correlation between pulse wave velocity and age ($r = 0.922$, $p < 0.001$). The ankle-brachial index had a statistically significant positive correlation at a weak level with left ventricular mass index and carotid intima-media thickness, in which the coefficient r was equal to 0.219 ($p < 0.05$) and 0.250 ($p < 0.001$), respectively. Pulse wave velocity also had a statistically significant positive correlation at a weak level with left ventricular mass index and carotid intima-media thickness, in which the coefficient r was equal to 0.188 ($p < 0.05$) and 0.289 ($p < 0.001$), respectively. Pulse wave velocity had a multivariable linear correlation with gender, pulse, mean blood pressure, and ankle-brachial index with statistical significance; and they were written in the form of the following equation: Pulse wave velocity ($R^2: 41.3\%$) = $0.641*(\text{Gender}) - 0.027*(\text{Pulse}) + 0.043*(\text{Mean blood pressure}) + 8.378*(\text{Ankle-brachial index}) - 3.254$.

Conclusion: Arterial stiffness was statistically correlated with left ventricular mass index and carotid intima-media thickness in the hypertensives. Through the above research results, we suggest that the hypertensives should be combined with the evaluation of hemodynamic parameters and arterial stiffness for contributing to the diagnosis and detection of cardiovascular complications, thereby improving the quality of monitoring and treatment in hypertensive patients.

Case Report

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[FDG PET/CT of uncommon cardiac angiosarcoma with bone metastases: a case report](#)

Cardiac angiosarcomas are rare malignant neoplasms with an aggressive clinical course. These are characterized by the absence of specific clinical findings, rapid growth with frequent metastasis at the time of diagnosis, correlated with poor prognosis, and reduced response to treatment. But with early diagnosis, more possibilities for treatment and survival can be provided. We report the case of a young woman diagnosed with right atrial angiosarcoma locally advanced with bone metastases detected by ^{18}F -FDG PET/CT, which revealed distant disease extent at diagnosis, consequently, chemotherapy was started.

Research Article

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[Prevalence and pattern of congenital heart disease among children with Down syndrome seen in a Federal Medical Centre in the Niger Delta Region, Nigeria](#)

Background: Down syndrome (DS), or Trisomy 21, is the most common genetic disorder in the world and congenital heart disease (CHD) contributes significantly to morbidity and mortality in this population. Early diagnosis and prompt cardiac intervention improve their quality of life. This study was done to determine the prevalence and pattern of congenital heart disease among children with Down syndrome seen at the Paediatric Cardiology Unit of Federal Medical Centre (FMC), Bayelsa State.

Method: A prospective study of children with Down syndrome referred for cardiac evaluation and echocardiography at the Paediatric Cardiology Unit of FMC, Bayelsa State over four years from 1st January 2016 to 30th December 2019. Data on socio-demographic information, echocardiographic diagnosis, and outcome were retrieved from the study proforma and analyzed.

Results: A total of 24 children with Down syndrome were seen over the study period. Their age ranged from 0 to 16 years. The majority, 20 (83.3%) of the children with Down syndrome were aged 5 years and below. There were 13 males and 11 females with a male to female ratio of 1.2:1. A total of 23 (95.8%) of the children with Down syndrome had CHD. The most common CHD was AVSD (including complete, partial, isolated, or in association with other defects) in 66.6% followed by TOF in 8.3%. Multiple CHDs were seen in 43.5% of the children. Only one child (4.2%) had a structurally normal heart on echocardiography. All the children with Down syndrome had pericardial effusion of varying severity while 33% had pulmonary artery hypertension (PAH). The fatality rate among the children seen with Down syndrome over the study period was 34.8% and only one child (4.2%) had open-heart surgery with the total repair of cardiac defect during the study period.

Conclusion: Morbidity and mortality are high among children with Down syndrome due to the high prevalence of CHD. Early referral, diagnosis, and prompt intervention are encouraged.

Research Article

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[Save the radial: go distally](#)

Coronary artery disease is the leading cause of death worldwide.

Percutaneous coronary intervention (PCI) is one of the most widely performed medical procedures used to save lives, currently over 3 million annually worldwide.

The femoral artery has been the preferred vascular access site.

However, radial access is gaining extensive popularity due to the benefits of earlier ambulation, fewer access site complications, and decreased rates of bleeding.

Improvements in technology and understanding of the anatomic features of the vascular system have led to new insights into coronary angiography procedures.

Distal radial access, which was first used in 2017, shows a higher success rate and fewer complications than previous sites; therefore, it might be the future for cardiovascular intervention.

For this purpose, we conducted this prospective study at Beirut Cardiac Institute (BCI) comparing the two arms: radial vs. distal radial artery techniques through the anatomical snuffbox, in terms of patient's length of stay, complication rate, and success rate of each procedure.

Case Report

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[Fibromuscular dysplasia and aortic dissection](#)

Fibromuscular dysplasia is a rare, non-atherosclerotic, non-inflammatory vascular disease that typically affects women between the ages of 20 and 60 years.

Although any artery can be affected fibromuscular dysplasia most commonly affects the renal and carotid arteries.

Fibromuscular dysplasia of the renal arteries usually presents with hypertension, while carotid or vertebral artery disease causes transient ischemic attacks, strokes, or dissection. Aortic dissection is rare. We present the clinical case of a patient with fibromuscular dysplasia with type B aortic dissection.

Research Article

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[Control of arterial hypertension and risk of new-onset of atrial fibrillation in patients with metabolic syndrome](#)

Background: An association between Atrial Fibrillation (AF) and Metabolic Syndrome (MS) a constellation of abnormalities (high blood pressure, hyperglycemia, dyslipidemia, and abdominal obesity), has been demonstrated. There have been many studies that have shown that elevated blood pressure (BP), was significantly associated with an increased risk of AF. It is uncertain whether maintaining the optimal BP levels can prevent AF in the patients with MS categorized as 'high-risk' patients.

Objective: The aim of this study was to evaluate the influence of control of BP on the occurrence of new-onset atrial fibrillation in patients with Metabolic Syndrome.

Methods: Into this observational study, was enrolled 435 consecutive patients (210 males and 225 females) aged 45-79 years who fulfilled criteria for MS. Participants were selected among primary and secondary care patients, who were receiving ongoing care for arterial hypertension in the period from November 2018 till November 2021. The study was conducted at outpatients in 5 Health Care Clinics (3 Secondary Health Care Clinics and 2 Primary Health Clinics). Patient were categorized according to their BP levels as Group 1-patients with controlled BP, {(patients aged < 65 years Systolic Blood Pressure (SBP) of 120 - 130 mmHg, patients aged ≥ 65 years SBP of 130 - 139 mmHg)} and Diastolic Blood Pressure (DBP), {(patients aged < 65 years of < 80 mmHg. but not < 70 mmHg; patients aged ≥ 65 years of 85 - 89 mmHg)}, or Group 2-patients with uncontrolled BP(> 130/80 mmHg), and in patients aged ≥ 65 years BP (≥ 140/90 mmHg).

Results: New-onset of AF, was more frequent in participants with uncontrolled BP, respectively (34.7% vs. 19.5%, $p = 0.009$). Patients with uncontrolled BP have more frequent persistent AF (15.2% vs. 0.04%) and permanent AF (0.08% vs. 0.02%), whereas there was not significant changes between groups in relation to frequency of paroxysmal AF, respectively (12.8% vs. 10.9%, $p = 0.29$). There was observed significant association of uncontrolled BP with: increased frequency of AF (OR = 2.193; 95% CI 1.390 - 3.439), persistent AF (OR = 3.931; 95% CI 1.771 - 8.084), permanent AF (OR = 4.138; 95% CI 1.383-12.381), LA. Dimension ≥ 2.2 cm/m² (OR = 2.089, 95% CI 1.330 - 3.252), BMI (OR = 5.226, 95% CI 3.155 - 8.659) and 5-risk factors for MS, respectively (OR = 2.998, 95% CI 1.833 - 4.901).

Conclusion: Optimal BP levels, can reduce the frequency of new-onset AF in patients with MS categorized as 'high-risk' patients. Uncontrolled BP was associated with an increased risk of both subtypes of AF (persistent and permanent) in the patients with MS categorized as 'high-risk' patients.

Case Report

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[Overview of glycemic control among admitted patients with diabetes in Tripoli University Hospital](#)

Aim: To examine the relationship between the levels of HbA1c and hospital admission rates.

Methods: We recorded HbA1c levels of all diabetic patients in Tripoli University Hospital over one year.

Results: The mean HbA1c was 8.03%, with no difference between males and females. Over half of patients (56.5%) were admitted through their diabetes was well-controlled. Over half of the patients with type 1 diabetes (57/102, 55.9%) had a high HbA1c at admission compared to 42.1% of patients with type 2, who were mainly admitted with HbA1c level within the acceptable range set for this study. The HbA1c level was positively and significantly correlated with the length of hospital stay ($R = 0.93$, $p = 0.000$), and was significantly associated with hyperglycemia, diabetic ketoacidosis, coronary artery disease, limb ischemia, cataract, osteomyelitis, and non-alcoholic steatohepatitis.

Conclusion: HbA1c is correlated significantly with hospitalization in type 1 diabetes but not in type 2.

Retrospective Study

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[Lifestyle modification practice and associated factors among diagnosed hypertensive patients in selected Hospitals in West Arsi Zone, Oromia Regional State, Ethiopia](#)

Background: Globally 1.13 billion people were living with hypertension, Out of this two-thirds of them were living in low and middle-income countries. In Ethiopia, Non-Communicable Disease deaths are estimated at around 42%. However, it remains widely undetected and poorly controlled. To resolve these, lifestyle modification approaches that are often overlooked are the cornerstone of the prevention and management of hypertension.

Objective: To assess lifestyle modification practice and associated factors among hypertensive patients in selected hospitals in West Arsi Zone, Oromia Regional, Ethiopia December 7 to 21, 2019.

Method: Hospital-based cross-sectional study was conducted in the selected public hospital among 299 hypertensive patients. Systemic random sampling methods were used to select the study participants. Data were collected by face-to-face interviews using a structured questionnaire by trained data collectors. Data were analyzed using descriptive statistics and multivariate logistic regression method to identify predictors of the outcome ($p < 0.05$).

Results: Of the total participants, only 25.2% (95% CI: 18.8-32.9) of the patients were practiced recommended lifestyle modifications. Patients Age older than 65 years (AOR = 2.9, 95% CI: 1.17 - 7.0), the patients with 2-5 years' time since diagnosed hypertension (AOR = 0.26, 95% CI: 0.07 - 0.9), multiple co-morbidity (AOR = 2.7, 95% CI: 1.25 - 5.8,) and their knowledge on hypertension management (AOR = 14.6, 95% CI: 4.6 - 45.9) have an independently associated with recommended lifestyle modification.

Conclusion: Lifestyle modification practices among hypertensive patients were low in this study. Age, comorbidity, time since diagnoses of hypertension, and knowledge of lifestyle were identified as predictors of the outcome.

Case Report

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[Age, smoking, hypertension, and aortic aneurysm: Interactions and risks](#)

Background/Aim: Aortic aneurysm is the bulging of a weakened portion of the aorta. The aorta is the major blood vessel that feeds blood (carrying oxygen, nutrients and water) to the tissues of the body. When a portion of the wall of the aorta becomes weak, blood pushing against the vessel wall can cause it to bulge like a balloon (aneurysm) leading to aortic dissection (a tear in the wall of the aorta that can cause life-threatening bleeding or sudden death). Blood pressure is the force arterial blood exerts on the wall of the artery. When this pressure is consistently high above 140/100 mmHg it is referred to as hypertension. As an individual gets older over time, physiological functions of the body depreciate leading to some abnormalities. Smoking is the consumption of tobacco mostly by inhalation of the smoke that is produced from burning the tobacco. This review article examines the close interactions between age, smoking, hypertension and aortic aneurysm, with a view to understanding mechanisms by which these factors predispose a patient to an aortic aneurism. It is also to observe if these factors interfere with treatment and recovery from aneurysms.

Conclusion: After careful review, it is observed that age and smoking are risk factors for hypertension, and together with hypertension, the three factors predispose an individual to high risk for aortic aneurysm.
