Editorial on clinical cardiology studies

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Venkata Botcha SS. Editorial on clinical cardiology studies. J Nurs Res Prac. 2022; 6(1):1-3.

ABSTRACT

Clinical cardiology is considered to have begun when a little-known 17th-century physician named John Floyer (AD 1649-1734) became captivated with the pulse. The arterial pulse had long been used in physical examinations before Floyer. Clinical Cardiology is the branch of medicine which deals with the diagnosis and treatment of heart diseases. There are three main types of cardiology: invasive, non-invasive, and interventional. In clinical cardiology, heart function analysis is essential for patient management, disease diagnosis, risk assessment, and treatment decision.

The identification of right and left-sided cavities, as well as main arteries, is a crucial step in the diagnosis of heart illness in clinical cardiology. Medical imaging is a noninvasive diagnostic tool that can be used to analyze cardiac anatomy and detect pathological alterations in disease states such dilated cardiomyopathy, hypertrophic cardiomyopathy, and right ventricular dysfunction.

Key Words: *Clinical cardiology; Patient management; Disease diagnosis; Risk assessment; Treatment decision*

INTRODUCTION

The Clinical Cardiology Journal recently published volume 5 with 6 issues. In the volume 5 and issue 2, 5 articles have been published. In Issue 2 Sayin S, et al. discussed about "Left Atrial Volume Index (LAVI) in hypervolemic patients undergoing chronic hemodialysis" [1]. The aim of study is to search how there is a relationship between volume quantity and LAVI in chronic hemodialysis patients. Design of the study was prospective cross-sectional study. Mortality in chronic Hemodialysis (HD) patients is occurred often due to cardiovascular diseases.

Volume overloads and Left Atrial Volume Index (LAVI) are prognostic predictors both all-cause and cardiovascular mortality. Method of this study was, 102 hemodialysis patients (male: 53, female: 49) were included to this study. The patients were divided to two groups in according to ultrafiltration (UF) (<10 mililiter (mL)/kg/hour or ≥ 10 mL/kg/hour). If UF was ≥ 2.5 L, it was accepted hypervolemia.

Left Atrial Volumes (LAV) was measured by using an echocardiography by a cardiology specialist [2]. LAVI was determined by left atrial volume divided by body surface area. ≥ 32 mL/m^2 of LAVI was accepted high, Statistical analysis was done by using Mann-Whitney U test and Pearson correlation test.

Result and conclusion of this study: In hypervolemic group (n=53), means of LAV, LAVI and UF were 52 cm^3 ± 24 cm^3, 32.1 mL/m^2 ± 14 mL/m^2 and 2727 mL ± 538 mL, respectively. In normovolemic group (n=49), means of LAV, LAVI and UF were 56 cm^3 ± 28 cm^3, 30.3 mL/m^2 ± 14 mL/m^2 and 2063 mL ± 589 mL, respectively. Mean of LAVI values were found high in hemodialysis patients with hypervolemia. Method of this article include, this study was a prospective cross-sectional clinical study. One-hundred and two patients undergoing chronic HD (male=53, female=49) were included. This study was approved by the local ethics committee of the medical school. Patients were categorized into two groups according to the mean UF rate over the 3-months period prior to the beginning of the study. The UF rate limit was determined to be 10 mL/body weight (kg)/hour. The blood pressure of all patients was measured during rest days after dialysis. The body surface area of the patients was calculated by the DuBois formula. Biochemical values were obtained from medical records taken 1 month prior [3]. Exclusion criteria for the study were patients with heart failure, an active infection, atrial fibrillation; major heart valve disease, uncontrolled hypertension, no consent, or HD time Sharma T, et al.

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Received: January 2, 2022, Accepted: January 21, 2022, Published: January 28, 2022

discussed the Stress cardiomyopathy in patients with COVID-19 infection [4]. In this article author explained that COVID-19 pandemic has been the most widespread pandemic in the last century. 8% of COVID-19 patients have some sort of cardiac injury. Only sporadic case reports and case series have been published addressing stress cardiomyopathy in this patient population. We reviewed the clinical presentation, pathogenesis, and outcomes of stress cardiomyopathy in patients with COVID-19 infection. According to this study author found 37 patients, 43.25% were males. 21.6% presented with chest pain and 90% had elevated troponin during the illness. ECG changes included T wave inversion in 37.4% and ST segment elevation in 35% of patients. Coronary angiography when pursued was negative for obstructive coronary artery disease [5].

The diagnosis was confirmed by decreased left ventricular systolic function (</=45%) and wall motion abnormalities on echocardiography or ventriculography. 68% had the typical Takotsubo pattern, while reverse-Takotsubo pattern was observed in 19% of patients. 8% patients had global/biventricular hypokinesia and 5% were found to have a mid-ventricular variant. 73% of reported patients recovered completely from COVID-19 [5,6]. Author concluded that stress cardiomyopathy can be important consequence of COVID-19 infection. High index of suspicion is crucial for prompt diagnosis and management.

Another case report entitled Primary hyperaldosteronism: A very rare etiology of coronary artery ectasi by Rasras H, et al. discussed about Primary hyperaldosteronism [7]. In this study, a 67-years-old man, with a history of treatment-resistant hypertension, was admitted to intensive care unit of cardiology for N-STEMI. His coronary angiography revealed an ectasia of all three major coronary arteries without significant luminal obstruction (TIMI III); and he was put on Dual antiplatelet therapy. Etiological assessment found an Idiopathic primary hyperaldosteronism, and our patient is actually on spironolactone with good blood pressure controls.

Conclusion of this study, early treatment of primary hyperaldosteronism and a good therapeutic approach for coronary ectasia are important to prevent any life threatening complications [8]. CAE is a rare discovery, but with the development of non-invasive imaging techniques, these lesions will be more frequently confronted. Atherosclerosis seems to be the most common cause in adults and Kawasaki disease in children. The presentation of ph as a behind agent of CAE is exceptional. CAE may cause recurrent ACS with an obstructive or non-obstructive lesion [7,8]. The treatment is medical, interventional or surgical, depending on clinical and radiological situations [9].

Bainey KR, et al. discussed about 3D carotid ultrasound in patients with a negative exercise stress test: A practical risk stratification tool. In this article author discussed about Exercise Stress Tests (EST) are frequently used to evaluate chest pain [10]. While a negative EST is reassuring, further risk stratification for Coronary Artery Disease (CAD) may be warranted. Three-Dimensional (3D) carotid ultrasound is a non-invasive tool which can be used to identify subclinical atherosclerotic disease. We investigated the prevalence and extent of subclinical atherosclerotic lesions using 3D carotid ultrasound in patients with chest pain and a negative EST, with the aim of understanding the changes in atherosclerotic lesions with statin therapy at 1 year [11].

Method of this article includes 80 patients were prospectively enrolled and all received additional vascular assessment with 3D carotid ultrasound. If subclinical atherosclerosis was identified, high-dose statin therapy was recommended. A 3D carotid ultrasound scan was repeated at 12 months. Result of these study 37 patients (46.3%) had carotid plaque. At baseline, median plaque volume (IQR) (left carotid, right carotid, or both) was 32.0 mm^3 (17-123). At 12-month follow-up (n=22), median plaque volume was 116.0 mm^3 (46-279) (p=0.004). Of these, only 40.9% were on high-dose statin therapy. Total plaque volume remained stable in subjects on statins (46.5 mm^3 (25-97.5) at baseline; 50 mm^3 (29-131) at 12 months, p=0.596) while it increased in those without statins (20 mm^3 (10-31) at baseline; 117 mm^3 (78-279) at 12 months, p=0.003) [12,13].

CONCLUSION

Conclusion of this study, in patients with chest pain and a negative EST, roughly one-half have subclinical atherosclerosis as detected with 3D carotid ultrasound. Plaque progression commonly occurs at 12 months, but is less likely with statin therapy. A further randomized study is required to confirm our findings.

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