Assessment of mitral valve area by 3D echocardiography in rheumatic mitral stenosis: Validation of offline 3D planimetry measure

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Objectives: The aim of this study is to validate the feasibility and accuracy of performing offline planimetric measurement of mitral valve area (MVA) using real time 3-dimensional transesophageal echocardiography (3D TEE), and to compare it with methods used routinely in clinical practice: 2-dimensional (2D) planimetry and pressure half time (PHT).

Background: Measurements of MVA by (2D) planimetry and Doppler (PHT) remain the mainstay methods used in routine clinical practice. 3D TEE provides more improved accuracy and reproducibility over 2D methods in theassessment of mitral valve morphology. Planimetry of the MVA by 3D echocardiography has only been done through multi-planar reconstruction of the mitral valve orifice. However using offline 2D image calibration and measurement tools allows us to measure MVA by 3D planimetry.

Methods: 45 patients with moderate to severe rheumatic mitral stenosis were referred for transthoracic and transesophageal (TEE) echocardiography 2D and 3D. Offline planimetric measurement of MVA obtained from real time 3D TEE zoom views of the mitral valve from both left atrial (MVA 3DPLA) and left ventricular side (MVA 3DPLV) were compared to MVA by 2D planimetry and PHT. MVA measurements (2D and 3D) were reported by two independent readers and interobserver variability was assessed. MV areas measured by these three methods were compared using Altman and Bland methods and Shukla's correlation.

Results: The Altman and bland analysis showed consistency among all three measurements methods. 3 DTEE showed the least variability across different clinicians compared to 2 DTEE and PHT, Mean difference 0.08, −0.15, and −.17, respectively.

Conclusion: 3DTEE planimetry appears to be a consistent technique for measuring MVA and provides the least variability in practical setting.

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Kawasaki disease, delayed referral as a cause of coronary artery affection

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Kawasaki disease (KD), an acute febrile vasculitis, is the most common cause of acquired heart disease in infants and young children. However, the diagnosis of infantile KD can be difficult or delayed due to vague clinical manifestations. This current study aimed to review patients referred to pediatric cardiology at PSCC-Qassim with a diagnosis or suspicion of Kaawasaki disease.

Methods: Retospectively review of the database as well as patients files.

Results: During the period from August till 2009 August 2012, 23 patients were referred to PSCC-Q, with a mean F/U period of 32 months. The mean age of presentation ±SD was 32 ± 28 months (range 5–96 months). The timing of referral was ranging from 2 to 30 days from the onset of fever. 13 patients were having complete criteria for Kawasaki on presentation, 8 of them developed cardiac affection. Out of the 22 patients referred 12 had cardiac abnormality in the form of mitral insufficiency in 2, aortic root dilatation in one and coronary artery involvement in 6 patients. All patients except one received IgG at a mean time from onset of fever of 10 ± 6 days (range 5–30 days). Two patients required a second dose of IgG after 48 h from the first dose. Initial echo was normal in 13. The most commonly affected coronary artery was the LAD. ECG was abnormal in one. Comparison between the groups with and without cardiac affection was done. There was a difference in all variables but did not reach a statistically significant value.

Conclusion: A significant number of patients with complete as well as incomplete Kawasaki had cardiac involvement especially coronary atery affection. Delay in the referral as well as in the administration of IgG may lead to developement of coronary artery involvement.

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Survival outcome of 100 patients who underwent transcatheter aortic valve implantation (TAVI)

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Background: TAVI is a new alternative treatment for high risk patients with severe aortic stenosis (AS). The procedural success and survival have improved over time. We report the survival data of 100 patients who received TAVI at Prince Sultan Cardiac Center, Riyadh.

Methods: Patient's clinical, imaging and procedural data were collected in a data base, and they were followed at 6 month and yearly afterward. The survival data were derived using statistical software

Results: 100 patients underwent the procedure with mean age of 78.8 ± 8.8 years, 55% males, and 45 % females. 60% of patient received Edward's valve, and 40% received Core valve. The procedural success was 95%. The 30 days mortality was 10% in patients who received Edward's valve, and 5% in those received Core valve. The 1-year mortality was 21% in patients received Edward valve and 10% in those received Core valve. The 30 days mortality for patients who had trans-femoral Edward approach was 9%, and for those who had trans-apical approach was 11%. The 1-year mortality for

trans-femoral Edward approach was 15%, and for the trans-apical approach was 30%.

Conclusion: Elderly patients with severe AS and at high risk for surgery can undergo TAVI with high success rate, and acceptable mortality rate. The highest mortality rate at 1 year was in patients who underwent trans-apical TAVI.

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Chest pain in paediatric patients referred to paediatric cardiology clinic at PSCC qassim

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Chest pain is a common paediatric complaint. Chest pain due to a cardiac condition is rare in children and adolescents, with a prevalence of less than 6%. History and physical exam may be sufficient for identifying the majority of significant aetiologies.

Objectives: To review the different causes of chest pain of patients referred to PSCC-Q

Method: Rertrospective analysis of our database. Follow up of patients was done with telephone call of all patients family to ask about the child and the chest pain status.

Results: During the period from January 2011 till December 2012, 28 patients were referred because of chest pain to the cardiac clinic. 18 (64%) were females and 10 (36%) were males. Palpitations were present in 7 of them (25%). Four patients were having noncardiac symptoms in the form of arthralgia in two and recurrent tonsillitis in two. Tow patients were having a positive family history of cardiac problems in the form of mitral valve prolapse in one and dilated cardiomyopathy in the other. General examination and Vital signs were normal in all of them. The mean ± SD of the heart rate, blood pressure and saturation were 99 ± 15 bpm, 102/63 ± 11/9 mm Hg, and 97 ± 1% respectively. The mean ± SD of the weight and height were 30 ± 16 kg and 131 ± 10 cm, respectively. Cardiovascular examination was normal in all of them. Innocent systolic murmur was present in 5 of them (18%). ECG was also normal in all of them. One patient had mild prolongation of the PR interval. Those with history of palpitations had Holter monitoring for 24 h which were normal in all of them. Chest pain was recurrent in 6 patients (22%) and was related to exertion in only one. On Followup all patients were alive and asymptomatic.

Conclusion: Chest pain in children usually is benign. History and physical exam usually are sufficient. Laboratory testing should be guided by History and physical exam.

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Improvement in door-to-balloon time at King Abdulaziz Cardiac Center: Are we achieving the goal?

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Background: Early reperfusion in acute ST-segment elevation myocardial infarction (STEMI) is very important to improve patients clinical outcome. Implementing institutional plan to decrease door-to-balloon time is crucial to achieve this goal. Our goal is to met the ACC/AHA recommendations of door-to-balloon time <90 min.

Methods: A chart review of all cases of primary percutaneous coronary intervention (PCI) for ST-segment elevation myocardial infarction (STEMI) performed. All door-to-balloon times were recorded. The average door-to-balloon time was calculated.

Results: 536 patients underwent primary PCI for STEMI from September 3, 2008–Sept 30, 2012. For each patient, the initial presenting time, the first ECG time, the time ER physician saw the patient and activate the cath lab, the time patient arrived to cath lab, and puncture time to balloon inflation were recorded. 52 patients were excluded from the study for not having clear door-to-balloon time. 64.2% of the patients met the ACC/AHA recommendation of <90 min door-to-balloon time. The average door-to-balloon time was 87.7 (STD + 35.5) minutes for all patients. There was significant improvement in door-to-balloon time from2008 to 2012. Average door-to-balloon time reduced from 105 min in September 2008–December 2009 to 72 min in 2012. In 2012 door-to-balloon time was below 90 minutes in 86% of patients versus 46% in September 2008–December 2009.

Conclusion: Sixty-four percent of patients underwent primary PCI in King Abdulaziz Cardiac Center met the recommended guidelines. In 2012, 86% met the recommended guidelines. Our future goal is to achieve the recommended guidelines in all patients.

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Incidence of in-stent re-stenosis with CATANIA Coronary Stent

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Objectives: The study sought to assess safety and efficacy of implantation of CATANIA Coronary Stent.

Background: CATANIA Coronary Stent is new stents coated with an inorganic, high molecular weight polymer Polyzene F. It is a flexible cobalt chromium balloon expandable stent. Polyzine-F was claimed to have low surface thrombogenicity, anti-inflammatory, bacterial resistance, and pro healing effects which result