diastolic dimension and Left ventricular end systolic dimension were not significantly different comparing baseline measurements of both groups but changed to be significantly higher starting from the 3rd month of follow up in group I than group II. Measures of systolic and early diastolic velocities at lateral site of the mitral annulus during the follow up of permanent pacing patients showed a significant reduction in the mean value of mitral annular systolic velocity in patients of both groups during follow up compared to the mean value at the beginning of the study.

**Conclusion:** TDI showed deterioration of right ventricular and left ventricular functions in VVI pacing when compared with DDD pacing.

**Effect of high flow arteriovenous fistula on cardiac function in hemodialysis patients**

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**Background:** Vascular access for hemodialysis (HD) with an inappropriately high flow may underlie the onset of high output cardiac failure. The aim of this study was to determine the prevalence high flow access (HFA) in chronic HD patients, and to determine its effect on cardiac functions.

**Methods:** This cross sectional study was conducted on 100 chronic hemodialysis patients through arteriovenous fistula (AVF). AVF flow (Qa) was assessed using Color Doppler ultrasonography. The study cohort was subdivided into 2 groups based on AVF flow: Group A (Non-HFA group with Qa < 2000 ml/min), and Group B (HFA group with Qa ≥2000 ml/min). Transthoracic echocardiography was performed for all patients to assess cardiac function.

**Results:** Prevalence of HFA was estimated at 24% of study population. Mean AVF Qa for group A was 958.63 ± 487.35, while mean AVF Qa for group B was 3430.13 ± 1256.28. The HFA group demonstrated a significant dilatation in LV and LA as compared to non-HFA group. A significantly lower LV ejection fraction was also observed with a mean of 57.32 ± 6.19 for group B as compared to 62.90 ± 6.19 for group A. A significant association between HFA group and high Qa/CO ratio (≥20%) was observed.

**Conclusion:** HFA is a prevalent HD vascular access problem. HFA was associated with dilated LV dimensions, impaired LV function. High Qa/CO ratio (≥20%) was an independent predictor of HOCF in our study population.

**The role of copeptin in the early detection of patients with acute myocardial infarction and its relation to midterm prognosis**

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**Background:** Rule-out of acute myocardial infarction (AMI) is a major challenge in Emergency Medicine. Due to the potential hazards of overseeing an evolving MI, most patients are subjected to 6-12 h observation on chest pain units (CPU) with the effect of an excellent prognosis at high costs (Pope et al., 2000; Goodacre et al., 2004).

**Study:** prospective observational study was conducted from the fifteenth February two thousand and fifteen to the fifteenth of September two thousand and fifteen in the Emergency Department of Ain-Shams University hospital. The study included forty patients with signs and symptoms of AMI, within the first 4 hours from onset of chest pain. Discharge diagnosis of STEMI was made in 23 patients (57%), and NSTEMI was 17 patients (42%), having an ST segment depression or had normal ECG. The study sample consisted of 40 patients their age ranged from 47 to 73 years with mean age (58.75 ± 6.04) years.; 25 patients (62.50%) were males and 15 patients (27.50%) were females. Eleven patient (27.50%) of all study patient were smokers.

**Results:** All patients at admission had high levels of ( above the cut off level): Copeptin, cTn I HL, CK-Total, CK-MB. Significant correlation was found between copeptin at admission and heart rate and cTnIHl, and there was significant negative correlation with LVEF%. Serum level of copeptin at discharge was a negatively correlated with LVEF% with highly- significant with P-value = 0.002 There was a non-significant difference in Serum level of copeptin at admission and at discharge, between STEMI and NSTEMI groups but it was higher in STEMI group. LVEF% was non –significant higher in NSTEMI. Major adverse cardiac events recorded in 3 patients. The serum level of copeptin at admission and at discharge they were higher in patients with MACE and this relation was very highly –significant with P-value < 0.001& P-value = 0.003 respectively. When comparing the MACE in STEMI and NSTEMI groups this relation was non-significant with P-value = 0.122.

**Conclusion:** Copeptin has a role in earlier and more accurate diagnosis of AMI when used after clinical work-up in combination with troponin with strong evidence supporting its prognostic value in AMI patients, when drawn at presentation.

**Incidence of pericardial complications after percutaneous coronary intervention by echocardiography**

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**Background:** Pericardial complications in coronary intervention is a rare complication of this procedure, Incidence has been reported to be between 0.2% and 0.6 %. Some were reported during the era of balloon angioplasty alone, other studies have referred to intervention using newer devices including stents and rotational and directional atherectomy, also this complication was seen in the treatment of chronic occlusions, which are therefore not risk free procedures. expertise in the use of covered stents may provide a valuable rescue option for this serious complication.

**Aim of the work:** Screening of occurrence of acute pericardial complication such as pericarditis and pericardial effusion after percutaneous coronary angiography by echocardiography within 24 hours after the procedure.

**Patients and methods:** This study was conducted in cardiology department in Ain shams university hospital included 100 consecutive patient starting of September 2017 to study the incidence of pericardial complication after percutaneous coronary intervention by echocardiography within 24 hours.

**Results:** 100 patients (22 female, 78 male), age between 30-85. Only one patient had perforation during bifurcational pci by
overexpansion of the balloon then they expand another balloon to seal the perforation. This represent 1%.

Conclusion: Pericardial complications is a rare complication after PCI.

The conjoint role of echocardiogram and cardiac magnetic resonance imaging in follow up of patients post Tetralogy of Fallot repair

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Background: Tetralogy of Fallot (TOF) is the most common form of cyanotic CHD. Surgical repair of TOF may be followed by various residual findings. Reliable serial follow up techniques after repair can determine when to intervene to improve long-term outcome. MRI is the gold standard for evaluation of right ventricle (RV) volumes and quantification of degree of pulmonary and tricuspid regurgitation, and echocardiograms represents the main line of follow up of these patients.

Methods: This was a cross sectional observational study including 50 patients after TOF repair, presented to Ain Shams University Hospital for follow up, over 24 months. A custom made sheet included history, ECG, transthoracic echocardiography (TTE) examination including RV linear diameters, RV function assessment by fractional area change (FAC), tricuspid annulus plane systolic excursion (TAPSE), RV longitudinal strain, pulmonary regurgitation (PR) assessment by diastolic flow reversal grading, Deceleration time (DT), PR jet width / pulmonary valve (PV) annulus ratio, and PR index (Time duration of PR/total diastole time) and full cardiac magnetic resonance (CMR) examination was conducted to ten patients; measuring RV volumes, RV ejection fraction (EF) and PR fraction

Results: our study included 50 patients with TOF post total surgical correction, 26 (52%) males and 24(48%) females. The youngest patient was 4 year old and the oldest was 40 year old with a median age of 10 years. All of them had full TTE and ten of them had CMR. RV longitudinal, mid and basal diameters mean values were 61 mm, 31 mm and 31 mm, respectively. RV FAC by TTE mean value was 51%, TAPSE mean value was 15, and GLS of RV mean value was -19. The residual peak PG across the RVOT mean value was 35 mmHg. Thirty-two of our patients (64%) had severe PR by diastolic flow reversal, fourteen patients (28%) had moderate to severe PR, and four patients (8%) had moderate PR. In the ten patients who had CMR, the EDV, and ESV mean values were 227ml, and 115 ml, respectively, the RVOT mean value was 35 mmHg. Thirty-two of our patients (75%). In one patient there was a mild residual shunt that decreased at the three month follow up. One patient developed first degree heart block. No other complications were observed. Improvement of septal & global function after VSD closure detected by STE.

Conclusions: STE to detect global & septal ventricular function in children is promising technique. Further studies are required to document its efficacy, safety, and long term results in a large patient population.

Assessment of ventricular septal function after VSD transcatheter device closure using speckle tracking technique

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Objective: To assess the global left ventricular systolic function and regional ventricular septal functions by 2D speckle tracking before and after the procedure in children who underwent closure of isolated VSDs by transcatheter device in comparison to normal controls.

Patients and design: 20 patients VSD closed by transcatheter approach & 20 normal control, aged 2.5–13 years, with PMVSDs underwent transcatheter closure by PFM coil, we compare before & more than 3 months Post procedural Transathoracic 2D Echocardiography and Circumferential and radial strain imaging by 2D- speckle tracking echocardiography

Preliminary Results: The PMVSD diameter ranged from 2–8 mm. The device diameter ranged from 1.5–13 mm. After deployment of the prosthesis there was no residual shunt in 15 of 20 patients (75%). In one patient there was a mild residual shunt that decreased at the three month follow up. One patient developed first heart block. No other complications were observed. Improvement of septal & global function after VSD closure detected by STE.

Conclusions: STE to detect global & septal ventricular function in children is promising technique. Further studies are required to document its efficacy, safety, and long term results in a large patient population.

The relationship between tumor necrosis factor alpha and left ventricular diastolic function

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Background: Inflammation is one of the earliest events in cardiac stress situations such as pressure and/or volume overload and involves elevated levels of endothelial adhesion molecules as well as increased production and release of inflammatory cytokines and chemokines in the tissue. Tumor necrosis factor alpha (TNFα) is a cell signaling protein involved in systemic inflammation and is one of the cytokines that make up the acute phase reaction and play an important role in the development of cardiac structural changes that can cause left ventricular diastolic dysfunction and/or failure.

Aim of the study: To evaluate the relationship between tumors necrosis factor alpha levels and left ventricular diastolic function.

Patients and Methods: This study was a case control study conducted at outpatient clinic of Ain Shams University Hospital that included 80 subjects were divided into two groups: Group I (cases): 40 patients with proved diagnosis of left ventricular diastolic dysfunction, based on resting echocardiographic findings.