well-structured case report form. Of the study population, 21 patients (55.3%) had lead vegetations visualized either by TTE or TEE. Nineteen patients had vegetations detected by TEE, compared to 6 patients only when TTE was used. The sensitivity of TEE and TTE were 90.5% (CI: 69.6–98.8%) and 28.5% (95% CI: 11.3–52.1%), respectively. Blood and wound culture results showed that in the presence of a vegetation, blood cultures were positive in 55% of the cases (P = 0.036) while only 44.4% of those with vegetations had a positive wound culture (P = 0.347). TEE has higher sensitivity in detecting vegetations compared to TTE in LIE. The presence of a vegetation is more likely to be associated with a positive blood culture than with a positive wound culture. Further studies ought to measure the accuracy of different modalities for capturing a vegetative lead. That is, measuring the additive value of blood and wound cultures to the overall cardiac imaging sensitivity, and to calculate the sensitivity of the combined techniques.

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16. Optimal guidance of percutaneous device closure of PDA by transthoracic echocardiography

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Patent ductus arteriosus (PDA) is common congenital cardiac lesion and the most accepted way of management is transcatheter occlusion by device which is usually done under fluoroscopy guidance. Transoesophageal echo cardiography and transaortic imaging were used in adult to guide the procedure which is with certain applications in pediatric age group transthoracic echocardiography (TTE) in pediatric population provides excellent images for PDA and may replace the use of fluoroscopy to guide PDA closure at least in special situations. To highlight the feasibility of device closure under guidance of TTE to be applied in sick patients who are not suitable for transfer to cardiac catheter laboratory or those with contraindication to contrast and or radiation application. 18 patients from July 2013 to May 2015 underwent TTE guidance device closure of PDA, 1 patient was excluded after device embolization which necessitate retrieval under fluoroscopy (fluoro.). Conscious sedation was used in 17 patients except 1 who was sick and already ventilated in ICU, there were 11 female and 7 male, antegrade approach was used in 10 patients with partial fluoro and retrograde approach in 8 patients without fluoro. Median age is 7 months, median weight is 8 kg (3.2–11 kg), 2 patients with renal impairment, 2 with Leukemia, median procedure time is 35 min, median fluoro. is 2.2 min, PDA size were small in 13 patients and moderate in 5, immediate closure is achieved in all. The devices were ADOI, ADOS, ADOI, Occlutech, and AVP2. Device embolization in 1 with successful retrieval and second device was used with complete closure percutaneous

PDA closure under TTE guidance is feasible, safe and recommended in selected patients with certain situation.

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Abstract Session 3

17. Usefulness of portable ultrasounds in screening for valvular heart disease in children

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Portable ultrasound machines are becoming increasingly useful in bedside routine exams and field surveys for early detection of heart disease. This is especially important for rheumatic heart disease (RHD) which is an emerging public health problem in developing countries. The aim of this study was to screen primary school children, with a focus on females living in rural settings, for valvular disease.Methods: A total of 465 girls aged 8–12 years were screened using portable vivid-e GE machine. All subjects were exposed to full history and clinical examination as well as a routine echo exam for left ventricular (LV) function assessed by M-Mode for fractional area shortening (FAS) and ejection fraction, assessment of mitral valve morphology, color Doppler and spectral Doppler for all four valves using pulsed and continuous wave spectral Doppler. Suspicous cases were referred to a higher center in Cairo University Children Hospital and followed up in the AFCRHD follow up clinic. Laboratory studies for anti-streptolysin-O (ASO) titer and C-reactive protein was carried out for suspicious cases. Findings: The study detected 24 children with valvular abnormality by echo examination. Mitral regurgitation (MR) was the commonest findings being detected in 21 cases (10 RHD and 11 congenital); one case with mitral stenosis (MS) of rheumatic origin, aortic regurgitation (AR) in 4 cases and stenosis in one case; tricuspid regurgitation in 4 cases and pulmonary regurgitation in 1 case. The MR detected was in the range of 10–30% i.e. mild to moderate, cases with trivial regurgete were excluded from the study. Mitral valve thickening and decreased mobility were evident in the cases diagnosed as RHD. However one case with congenital mitral prolapse also showed valve thickening. Hence the overlap between RHD and congenital prolapse did present a diagnostic dilemma. Overall RHD was diagnosed in 13 cases (6 definite and 7 suspected). Ventricular function assessed by M-mode for FAS and EF as well as spectral Doppler findings were within the normal range for age. Epidemiological assessment showed that most of the cases with positive echo findings came from the rural areas (91.7%) and were characterized by high maternal
illiteracy rates of 16.7% compared to 5.2% in the echo free cases. Increasing age, increasing number of children sleeping in one room and poor dietary habits and tendency to underweight increased the prevalence of valvular disorders detected indicating the need for screening populations at risk. We conclude that mitral valve is the most commonly affected valve. RHD is the commonest etiological factor and appears to be on the rise especially in underprivileged populations. Differentiating between rheumatic and non-rheumatic etiology for valve disease still poses a problem. We recommend that every child with suspicious RHD should be followed up carefully and the decision for prophylaxis should be based on multiple factors taking the family history, living conditions and general condition of the child into consideration. Portable echocardiography machines are the state of the art in early detection of RHD and should be recommended as the standard for diagnosis of RHD.

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18. Effect of standardized catheterization lab order forms on peri-procedural prescription errors, patient care and staff satisfaction

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Medication errors are the most common cause of iatrogenic adverse events. They can lead to severe complications, including prolonged hospitalization, unnecessary diagnostic tests and treatments, and even death. Objective: We set to explore the impact of introducing standardized cath lab order forms on medication errors, quality of patient care and staff satisfaction. This was a single center observational study conducted in a tertiary cardiac center in Saudi Arabia. We enrolled a total of 100 consecutive patients who underwent diagnostic or interventional cardiac catheterization before or after the introduction of standardized order forms. The cohort was divided into two equal groups. We compared medication prescription errors (as defined by hospital formulary) between the two groups. We also studies the impact of the standardized order forms on peri-procedural care including laboratory tests order completion, peri-procedural fluid and diabetes management, anticoagulant, diuretic and analgesia management. We have also employed a structured questionnaire to assess staff satisfaction with the use of these forms implementation of standardized order forms resulted in significant reduction of prescription errors from 32.0% to 0.0% (p = 0.025). There was also a significant improvement in patient care as indicated by improvement in the rates of completion of laboratory orders that improved from 76.0% to 96.0% after the implementation of order forms (p = 0.004), proper fluid management (100% vs. 86.0%, p = 0.023) and better peri-procedural diabetic management (see attached table). There was also improvement in the monitoring of the vascular access site (80% vs. 100%, p = 0.004) that resulted in reduction in access site related complications (6% vs. 0%). We administered a satisfaction questionnaire to 61 participants (nurses, physicians and pharmacists). The mean total satisfaction score was 62.8 for pharmacists, 50.4 for nurses and 48.6 for physicians indicating that the pharmacists were most satisfied with the implementation of these order forms and the physicians were the least satisfied (p = 0.052). Our study shows that standardized order forms have the potential to decrease medication-prescribing errors and improve quality of patient care among patients undergoing diagnostic and interventional cardiac procedures.

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19. Radial artery ultrasound predicts the success of transradial coronary angiography

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Smaller radial artery diameter, CSA, and perimeter is associated with higher vascular access complications during coronary angiography. The transradial approach has become the preferred vascular access during conventional coronary angiography (CCA). A small mean radial artery diameter (RAD), however, may lead to higher rates of vascular access complications (VAC). To date, there are no data regarding the effect of the radial artery cross-sectional area (CSA) and perimeter. We evaluated the impact of preprocedure radial artery diameters, the CSA, and the perimeter on vascular complications. We conducted a single-center prospective analysis of 513 patients who underwent CCA. Radial artery ultrasound was performed before and after CCA to measure the RAD, CSA, and perimeter. The average RAD, CSA, and perimeter were 2.60 ± 0.48 mm, 6.2 ± 3.0 mm², and 8.9 ± 1.7 mm, respectively. The same measurements were significantly larger in men than in women: 2.8 ± 0.5 vs. 2.4 ± 0.4 mm (P < 0.0001), 6.6 ± 3.4 vs. 5.3 ± 1.5 mm (P < 0.0001), and 9.3 ± 1.7 vs. 8.2 ± 1.5 mm (P < 0.0001), respectively. In all, 56 patients (11%) had VACs. The RAD, CSA, and perimeter were significantly smaller in patients whose procedures had VACs than in those with no complications: 2.3 ± 0.5 vs. 2.70 ± 0.54 mm (P = 0.0001), 4.9 ± 2.1 vs. 6.4 ± 3 mm² (P = 0.001), and 7.6 ± 2.1 vs. 9.2 ± 1.6 mm (P = 0.0001), respectively. Univariate logistic regression showed that radial ultrasonographic parameters can independently predict VACs as follows: odds