was (8 ± 5.16 months) and (6.31 ± 1.75 kg), respectively. The age and weight in group B was (7.6 ± 3.9 months) and (4.84 ± 1.12) kg, respectively. There were no significant differences between the two groups in terms of post operative course, and major complications.

Conclusion: Failure to thrive was not associated with increase in ICU morbidity and mortality in children undergoing VSD closure. Attempt to optimize the body weight for age in children with CHD may not add any beneficial advantages in term of surgical risk or postoperative ICU outcome.

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Impact of obesity on survival and New York Heart Association functional class in patients with systolic heart failure

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Background: Several studies have shown that in patients with heart failure (HF), obesity is not associated with increased mortality, but rather is associated with improved survival. This has been referred to as the ''obesity paradox''.

Objective: To examine the impact of body mass index (BMI) on survival and New York Heart Association (NYHA) functional class in a Saudi outpatient population with chronic systolic HF.

Method: This retrospective, descriptive study, analyzed data from patients with chronic systolic HF and ejection fraction less than or equal 40% attending a Cardiovascular Disease Management program (CVDMP) over a mean follow-up of 48 months.

Patients were classified according to their baseline BMI. Continuous variables were presented as mean and frequencies while categorical variable presented as percentages.

Risks associated with BMI groups were evaluated using multinomial logistic regression model.

Results: Mortality in the total population ($n = 903$) was 3.3% where 47% were above age of 60 and 77% were male. Significant co-morbidities included; 67% diabetes mellitus, 67% hypertension, 12% bronchial asthma, 11% thyroid problems, 6% renal failure and 36% of patients had an EF less than 25%.

BMI showed significant increase in the last follow-up compared to baseline ($p < 0.000$). Obesity, measured by BMI, showed no statistical impact on mortality ($p < 0.319$), but did significantly impact NYHA functional class ($p < 0.023$).

Conclusion: There was a chronological increase in BMI, and, although this had no significant impact on mortality, it had a significant negative impact on NYHA functional class.

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Improvement of mitral regurgitation after transcatheter aortic valve implantation (TAVI)

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Objectives: To assess the change in mitral regurgitation (MR) severity after transcatheter aortic valve implantation (TAVI).

Background: Mitral regurgitation (MR) is frequently present in patients with calcific aortic stenosis (AS). Following surgical aortic valve replacement, improvement in MR is reported in 27–82% of the patients. The changes in MR severity following TAVI are unknown.

Methods: From April 2009 to January 2011, 57 patients with severe symptomatic aortic stenosis underwent TAVI [40 cases Edwards Sapien valve (Edwards Lifesciences Inc, Irvine CA), and 17 cases the CoreValve ReValving System]. Transthoracic echocardiography was performed before and 3 months after successful TAVI procedure. MR was assessed by expert readers and by color flow mapping and was graded as none (grade 0), mild (grade 1), moderate (grade 2), moderately severe (grade 3) or severe (grade 4).

Results: The mean MR grade was 1.7 ± 1.0 and 0.9 ± 0.7 pre- and post-TAVI respectively (p value < 0.001). MR pretreatment was grade 0–1, grade 2, and grade 3–4 in 69%, 19%, and 12% of the patients, respectively. Six patients out of 7 (85%) with grade 3–4 demonstrated improvement (4 patients (57%) improved to mild, and 2 patients (28%) to moderate MR). Seven patients out of 11 (63%) with grade 2 demonstrated an improvement to grade 0–1. There was no association between the improvement of MR and the type of valve used.

Conclusions: MR improved significantly after TAVI for severe AS. Further study with careful echocardiographic evaluation of the mitral valve prior to TAVI may help to predict which patients should experience an improvement in their MR.

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Catheter intervention for branch and crossed pulmonary arteries

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Introduction: Over the last decade, stent implantation has become a widely accepted, effective therapy for the treatment of pulmonary arterial (PA) stenoses. Stent implantation has proved to be a safe procedure with minimal complications.

Objectives: To review our experience with branch PA stenting. We reviewed also catheter based interventions for patients with right aortic arch and crossed pulmonary arteries associated with branch PA stenosis.

Method: Retrospective data analysis of all patients who had branch PA stenting at KACC, NGHA, Riyadh KSA, during the period from January 2006 till October 2009. Patients with pulmonary atresia VSD and MAPCAS were excluded.

Results: Twenty-one patients were identified to have PA stenting during the study period. 14 were females (66.7%). Six patients (29%) were syndromic (Alagile syndrome, DiGeorge syndrome, Down syndrome, Goldenhar Syndrome, and Noonan Syndrome). Five patients (24%) had crossed Pas. Seven patients (33%) had PA, VSD, PDA, Two had TOF, one had AVSD with TOF, one DORV, one TGA, one truncus arteriosus with IAA type B, and one had Bicuspid AV with aortic stenosis as a primary diagnosis. All of them had branch PA stenting as a secondary procedure (post surgical intervention). Six patients (29%) had PA stenting as a primary intervention with no prior surgical intervention. Six patients (29%) had Bilateral branch PAs stenting, 11 (52%) had LPA stenting and 4 (19%) had RPA stenting. The median age at branch PA stenting was 35 months (range 2 months to 45 years). The median weight was 10.5 kg (2.8–100 kg). The median F/U period was 32 months (40 days to 61 months). Ten patients (48%) required stent dilatation after a median period of 28 months (12–38 months). One patient had failed LPA stenting (stent embolized and parked into RPA) who later underwent another intervention with successful LPA stenting.

Conclusion: Stent implantation has proved to be a safe procedure with minimal complications.

Even in those with crossed Pas. Restenoses is long term concerns which are amenable to redilatation with excellent results.

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Echocardiographic predictors of coarctation of the aorta

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Background: Echocardiography is the main diagnostic modality of coarctation of the aorta especially in infants less than 3 months. Sometimes it is difficult to diagnose coarctation of the aorta either because of poor echo window or because of the presence of a large PDA. Failure or delay in the diagnosis of coarctation will lead to morbidity as well as mortality.

Objectives: The objectives of our study were to look for echocardiographic predictors of coarctation of the aorta.

Methods: During the period from September 2010 to July 2011 echocardiographic measurements were performed for 67 normal infants referred for echocardiography. This was compared with 37 patients with proved coarctation either by surgery or cath. Echocardiographic measurements performed in both groups include aortic annulus, ascending aorta diameter, proximal transverse arch diameter, distal transverse arch diameter, aortic isthmus diameter, distance between aortic arch branches. Aortic valve anatomy , associated findings as well as surgical and cath diagnosis were reviewed. The ratio between the transverse arch and ascending aorta as well as between transverse arch and the distance between aortic arch branches were calculated. We compared both groups using SPSS statistical software. Measurements were done online as well as offline.

Results: During the study period 67 normal infants and 37 infants with coarctation were reviewed. The age group were from one day to one year and the mean weight were 4.48 ± 1.67 and 3.8 ± 2.19 kg for the normal and abnormal groups, respectively. There were no statistical difference between the two groups regarding the age weight as well as the gender. There were statistical difference in the echocardiographic measurements between the two groups regarding the transverse arch diameter with a smaller diameter in the CoA group (3.89 ± 1.17 vs 5.8 ± 1.05 mm, *P* value 0.0001). The ratio between the transverse arch and the ascending aorta was smaller in patients with CoA (0.55 ± 0.16 vs 0.73 ± 0.16, *P* value 0.0001). The distance between the left common carotid and the left subclavian arteries was longer in patients with CoA compared to those with normal arch (4.76 ± 2.37 mm vs 2.85 ± 1.59 mm, *P* value 0.0012). The ratio between the distance between the left common carotid and the left subclavian arteries to that of the transverse aortic arch diameter was higher in patients with Co (1.3311 ± 0.71 vs 0.54 ± 0.29, *P* value 0.0001). Bicuspid aortic valve was found in 57% of patients with CoA compared to only 6.5% of patients without coarctation (*P* value 0.0001).

Conclusions: Echocardiographic predictors of coarctation of the aorta include the presence of bicuspid aortic valve, hypoplasia of the transverse arch, smaller ratio between the transverse arch and the ascending aorta and high ratio between the distance between aortic arch branches and transverse aortic arch.

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Importance of early management of pulmonary artery hypertension among Adult with Congenital Heart Disease (ACHD)

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Background: Pulmonary artery hypertension (PAH) is a significant risk factor in patients with congenital heart disease. If left untreated, PAH can lead to reduced quality of life and functional class due to pulmonary vascular damage and right ventricular failure (RV).The prevalence of PAH in ACHD is estimated to be between 5% and 10%. In severe cases of PAH, treatment options are generally limited to palliative measures or heart–lung transplant. Early treatment of PAH improves quality of life and may reduce utilization of acute care facilities.