**Results:** Using TTDE, it was possible to visualize the distal LAD flow in 49 among 60 patients with angiographically patent LAD. Occluded LAD was detected in 9 among 14 patients with angiographically occluded LAD. The sensitivity, specificity, positive predictive value, negative predictive value and accuracy of the transthoracic Doppler echocardiography in the noninvasive assessment of the left anterior descending artery reperfusion with 2.5 MHz transducer were 81.6%, 64%, 90.7%, 54% and 78% respectively. Detection of the distal left anterior descending artery flow by TTDE was significantly correlated with the reperfusion of the left anterior descending artery as assessed by coronary angiography ($P = 0.001$).

**Conclusions:** Unlike the widely used noninvasive methods (ECG changes, resolution of ischemic-type of chest pain and characteristic pattern of rise and decline of cardiac markers) for assessment of reperfusion following anterior myocardial infarction, the use of TTDE can be used as more reliable, simple, noninvasive, and widely available tool for direct visualization of the LAD distal flow.

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**Long term results of surgical management of anomalous origin of the left coronary artery from pulmonary artery (ALCAPA) and mitral incompetence**

**Howida Alqathamy, Adel Ragheb, Wael Hussain, Yahia Alfaraidi, Roberto M. Di Donato**

**Background:** Establishment of two coronary systems is not the end point of challenge in management of anomalous origin of the left coronary artery from pulmonary artery (ALCAPA). To touch or not touch the mitral valve if there is severe mitral regurgitation is still a point of big challenge, another point is the timing and criteria for mechanical support (ECMO).

**Methods:** Forty-seven cases with a median age of 1.29 years (28 days to 8 years) underwent ALCAPA repair from January 1985 to July 2012. Seven cases (14.89%) had associated lesions. Ligation of anomalous left coronary artery was performed in four cases (8.51%), Takeuchi’s repair was done for three cases (6.38%) and 40 cases (85.1%) underwent direct aortic implantation of left coronary artery.

**Results:** Preoperative echo showed moderate to severe left ventricular dysfunction with severe mitral regurgitation in 15 cases (31.91%). Mortality rate was 17.02% (eight cases). Four cases (8.51%) needed ECMO support in operating room and two patients needed ECMO support in intensive care unit. Mitral valve repair was adopted in three cases (6.38) and mitral valve replacement was performed in one case (2.12%). Early postoperative echo showed moderate to severe mitral reguruge with severe LV dysfunction in eight cases (17.02%) which improved in the first year of follow up. One case (2.12%) returned back with left coronary artery origin stenosis after Takeuchi’s repair.

**Conclusion:** Early diagnosis and repair of ALCAPA improve outcome of surgery. Aortic implantation of left coronary artery is the best technique of ALCAPA repair and can be done easily. In severe mitral regurgitation, it is better not to touch the mitral valve as repair is very technically demanding especially in small babies without expected good results and consumes a lot of cross clamp time with subsequent bad impact on surgical outcome. Mechanical support should be decided according to the degree of LV dysfunction and severity of mitral valve regurgitation.

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**Total anomalous pulmonary venous connection repair; risk factors and outcome**

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**Background:** Repair of total anomalous pulmonary venous connection (TAPVC) is associated with high mortality and morbidity. Age of presentation, low birth weight, type of TAPVC, pre-operative infection, clinical situation, pulmonary venous obstruction, pulmonary hypertension and associated lesions are very important factors affect the outcome of TAPVC repair.

**Methods:** Seventy patients underwent TAPVC repair from 2000 to 2012 with a median age of 33 days and mean weight of 4.6 kg. Twenty-six patients (48.6%) had supracardiac type, 23 patients (32.8%) had intracardiac type, and nine patients (8.6%) had infracardiac type, while seven patients (10%) had mixed TAPVC.

**Results:** Operative mortality was 5.7% (4 patients), while late deaths was 4.3% (3 patients). Four patients out of these 7 deaths were due to pulmonary hypertensive crises (4/7, 57.1%). Obstruction and single-ventricle physiology were associated with a higher mortality rate (3/7, 42.9%). Mean CPB time was 104.3 min (range, 70–190 min) and mean cross-clamp time was 42.4 min (range, 29–70 min). Three patients had recurrent pulmonary venous obstruction. (4.3%) which required early re-intervention.

**Conclusion:** Mortality rate in TAPVC repair is higher in those patients who had single-ventricle physiology or pulmonary venous obstruction at time of repair. Pulmonary hypertension is another risk factor affecting the post-operative course of infants with TAPVC, particularly patients with obstructed, infracardiac TAPVC.

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**Impact of clinical factors on response to clopidogrel therapy in patients with acute coronary syndrome**

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