P-162

Postoperative chylothorax after congenital heart surgery

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Background: Postoperative Chylothorax following cardiothoracic surgery is the most frequent etiology of Chylothorax in the pediatric population. Chylothorax is a severe complication of cardiothoracic surgery with an increased length, of hospital stay and mortality. Only few studies have described large cohorts of patients with Chylothorax. The aim of the study is to describe a French cohort of patients suffering from Chylothorax, their evolution and risk factors of severe Chylothorax.
Methods: We conducted a retrospective review of all cases of Chylothorax following congenital heart surgery in Necker Enfant Malades Hospital from October 1997 to December 2015. In order to evaluate the risk factors for severe Chylothorax we chose a composite endopoint that combines death, recurrence of Chylothorax, surgical treatment and drainage duration superior to 15 days.
Results: 195 patients were diagnosed with Chylothorax between october 1997 and December 2015. Prevalence of Chylothorax was 1,9%. Almost half of the patients were treated for univentricular hearts (40,5%). In the remaining half, the principal congenital heart diseases were tetralogy of Fallot and its variants (17%), transposition of the great arteries (10%) and coarctation of the aorta or interrupted aortic arch (8%). Chylothorax occurred most after Bi directional Glenn surgery (22%), Fontan surgery (12%), Tetralogy of Fallot repair (12%) and coarctation of the aorta repair (8%). Risks factors for severe Chylothorax were Bi Directional Glenn procedure, OR= 2,9 IC 95% = 1,4-6,3, p= 0,004, delayed sternal closure 0R=4,2 IC95%= 1,4-12, p= 0,007. Concerning treatment, 195 patients were treated with fat free diet with addition of medium chain triglycerides (MCT diet). 120 (61%) patients had a satisfying evolution following the MCT diet only and 75 patients needed additional treatment. 43 of those patients had surgery and 32 patients were treated with octreotid. In the 32 patients treated with octreotid, 13 had surgery, after failure of medical treatment. In total, 56 (28%) patients needed revision surgery. Mortality rate was 8,7% (17 deaths).
Conclusion: Chylothorax is a severe complication after congenital cardiac surgery and the mortality is high enough to be of concern. Early treatment of this complication may lead to a decreased morbidity and mortality.