

LUNG PERFUSION SCINTIGRAPHY IN PATIENTS AFTER TOTAL SURGICAL REPAIR OF TETRALOGY OF FALLOT

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Lung perfusion abnormalities (LPA) are frequently observed in patients with tetralogy of Fallot (TOF). They can be of primary origin or occur as a result of different causes including surgery. There are several diagnostic modalities used clinically to assess LPA. Among others lung perfusion scintigraphy is a non invasive, sensible and easy accessible method.

AIM: The main aim of the study was assessment of frequency of lung LPA (both asymmetry of lung perfusion and regional perfusion defects) in patients after total surgical correction of TOF and its relation to treatment method (primary total correction vs palliative shunt prior to correction). Moreover analysis of gathered data was expected to evidence possible correlation between frequency and extent of LPA and treatment history.

MATERIAL AND METHOD: 110 patients (49 men and 61 women) after surgical repair of TOF were studied. In 33 cases palliative surgery (Blalock-Taussig shunt) was done prior to complete repair of TOF. Mean age was 15+/-8.2 years. Lung perfusion scans with use of 99m-Tc macroaggregates of albumin were analyzed semiquantitatively with assessment of relative uptake and regional perfusion defects.

RESULTS: asymmetric pattern of pulmonary perfusion was observed in 65 (59,1%) patients. Appearance of perfusion asymmetry was equal in patients after primary surgical repair and in those who underwent palliative shunt prior to correction. There was no prevalence of relative hypoperfusion of right or left lung in both groups of patients. Regional perfusion defects were observed in 44 (40%) cases. There was no difference in frequency of regional perfusion defects in patients after primary surgical repair and in those who underwent palliative shunt prior to correction and they appeared more often ($p<0.05$) in right than in left lung in both groups of patients. There was a significant correlation between age at surgical repair and prevalence of regional perfusion defects appearance.

CONCLUSIONS: asymmetric lung perfusion and regional perfusion defects are frequent findings in patients with TOF. There is no significant difference in appearance of LPA in patients after primary surgical repair and in those who underwent palliative shunt prior to correction. Correction of TOF at early age decreases the risk of regional perfusion defects but has no impact on asymmetry of pulmonary perfusion.