

**Current qualification criteria for echocardiography examination by a pediatric cardiologist in neonatal screening yields 19% pre-test probability of significant congenital heart disease**

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Neonatal echocardiographic screening remains an open debate. Clinical feasibility is obvious but cost-effectiveness remains of a concern. Proper qualification based on reasonable indications, and rational rules of follow-up avoiding both missed diagnoses and unnecessary costs are to be aimed at. This summarizes 20 months of neonatal screening in tertiary university center starting January 2014. The studied population encompassed 4758 life born newborns.

There were 1467 studies carried out in, and 1152 patients were examined. The mean birth weight was 2979+/-963g, range 600-5220g. 720 studies were ordered before the lapse of the second day and carried out before the third day of life. The most common indications for study were prematurity 27%, murmur 20%, positive pulsoximetry test 14%, prenatal diagnosis of congenital heart disease 13%, diabetes mellitus of the mater 8%, cyanosis/desaturation 5%. Other included respiratory distress, non-cardiac congenital and rhythm disturbances. 61% newborns were assessed to be normal or to have physiological findings. 38% had PFO, 3% had ASDII and in 8% the defect had in-between size. PDA was present in 25% cases but only 5% were significant. VSD was found in 98 (9%). CoA was suspected or mild in 12 (1%) cases and was critical in 9 (1%) cases, 5 of which with hypoplasia of the arch. There were 3 cases of balanced, complete AVSD and 1 partial. There were 6 (0,5%) pulmonary stenosis (3 significant), 13 (12%) cases of bicuspid AV, 13 mild aortic insufficiencies, 1 aortic stenosis, 18 moderate and 3 severe TR. There were 30 (2,6%) cases of complex defects: 6 ToF, 2 TAC I, 6 TGA, 4 HLHS, 2 PA, and single cases of Taussig-Bing, DORV, IAA-B, IAA-C, R-ISO, TA, PAPVR, TAPVR, Ebstein anomaly. There were 24 cases of ventricular hypertrophy related to diabetic fetopathy.

The total of significant congenital heart diseases was 225 and this yields decent 19% pre-test probability. On the other hand, a very early qualification for the echo study and normal or physiological findings in the vast majority of cases calls for further analysis whether the current qualification criteria can be fine-tuned to increase the performance of the whole screening without risking missed diagnoses.