

The importance and effectiveness of cardiac screening in early diagnosis of critical congenital heart diseases

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Aim: Cardiac screening test for early diagnosis of critical congenital heart disease (CCHD) is recommended by our ministry of health in newborns. We wanted to investigate the effectiveness of the pulse-oximetry screening test recommended by the ministry of health in our neonatal intensive care unit. Our study is planned to find an answer to this question regarding the subject matter.

Materials and Methods: Our study was planned retrospectively in cases followed up in our neonatal intensive care unit and obstetrics and gynecology clinic. Our study cases were accepted to the neonatal service of our hospital starting from 01/10/2015 in the 30-month period. Patients admitted from the neonatal and obstetrics / gynecology services were included in the study. Saturation measurements of these cases were made at the earliest 6th hour after birth. The test was considered positive, if saturation was <90 % in the right hand or the saturation was 90-94 % plus the right hand and any of the lower extremities saturation difference was greater than 3 % in three measurements performed at one hour intervals. Pulse-oximetry screening test was performed in all cases included in the study. SPSS 21.0 (Chicago, Illinois) was used for statistical analysis.

Results: A total of 12,504 cases were included in our study. Considering the exclusion criteria, some of our cases were excluded from the study, and CCHD was detected in 45 of the 12,223 cases accepted by ECHO examination. 36 of these 45 cases were suspected of CCHD with a physical examination and 41 with the pulse-oximetry screening test and were referred to the pediatric cardiology outpatient clinic. Pulse-oximetry screening test was positive in all 36 cases with CCHD determined by physical examination, but physical examination was found negative in 5 of 41 cases where pulse-oximetry screening test was positive. The 4 CCHD patients in the study could not be determined either by physical examination or by the pulse-oximetry screening test.

Conclusion: Physical examination alone does not have sufficient sensitivity and specificity. Pulse-oximetry screening test is more effective than physical examination in detecting neonatal cases with CCHD. Therefore, the appropriate combination of physical examination and pulse-oximetry screening test in the detection of CCHD cases may provide an advantage to physicians in early diagnosis.