

## Critical congenital heart disease screening with a pulse oximetry in neonates

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**Objective:** To compare the results of pulse oximetry screening for critical congenital heart disease (CCHD) in newborn infants performed at <24 h and >24 h following.

**Method:** Measurements were taken for each group at <24 h and >24 h following birth. Echocardiography was performed if the SpO<sub>2</sub> readings remained abnormal results.

**Results:** A total of 4518 newborns were included in this prospective descriptive study. Of these, 2484 (60.3%) were delivered vaginally and 1685 (39.7%) by cesarean section. Median time points of the screening were 25.4 (25.3-25.5) vs. 17.3 (12.2-22.4) hours after birth. In 4109 infants screened 24 h after birth, the mean pre- and postductal oxygen saturations (SpO<sub>2</sub>) were 96.5±1.99 and 97.7±1.98, while 127 infants screened within 24 h of mean preductal and postductal SpO<sub>2</sub> were 91.33±2.64 and 94.0±4.44. No CCHD was detected during the study period. Pulse oximetry screening was false positive for CCHD in 9 of 4109 infants (0.02%); of these, six infants were referred to pediatric cardiology and three cases were diagnosed as other significant, non-cardiac pathology. There were two cases with AVSD (atrioventricular septal defect, three cases with ventricular septal defect (VSD), and one case with patent ductus arteriosus (PDA).

**Conclusions:** Saturation values are different between <24-h and >24-h neonates in pulse oximetry screening. The screening in this study identified infants with other important pathologies, this forms an added value as an assessment tool for newborn infants.