Neonatal pulse oxymetry as a screening for congenital heart disease: single or double recordings?

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Received: 1 July 2010 / Accepted: 14 July 2010 / Published online: 28 July 2010
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The paper by Riede et al. demonstrates further the usefulness and effectiveness of pulse oxymetry screening (POS) in the detection of critical congenital heart defects (cCHDs) by measuring oxygen saturation (SpO₂) at 1 foot. They detected 14 neonates with cCHDs but missed four with cCHD, which is approximately one fourth of the patients with critical defects [2]. Single-site SpO₂ is recommended even by the AHA and the AAP, but we may not rule out that at least one of the four infants “missed” by the authors could be identified with the adoption of a two-site recording (right arm and 1 foot) [1]. Actually, some cCHDs may be missed by the single-site POS because SpO₂ may be higher (i.e. close to normal) in the legs than in the right arm and because pulmonary artery SpO₂ are higher than in the aortic arch—this may happen with d-transposition of the great arteries in the first few days of life in Taussig-Bing anomaly, in total anomalous pulmonary drainage into superior vena cava and in infants with truncus arteriosus with interrupted aortic arch. In all these cCHDs, the higher SpO₂ in the legs depends on the ductal shunting of (more) oxygenated blood to the descending aorta than to the aortic arch [3]. It is of note that these cCHDs are among those which may benefit more from prompt diagnosis and treatment. Therefore, despite the

risk of increasing the number of false positives, it has been suggested that two-site POS may increase sensibility of the screening up to 92%.

Finally, whether aortic coarctation may escape POS screening depends probably on the “dynamic” behaviour of this CHD, whose signs and symptoms appear when the ductus arteriosus begins to close—this underscores the need for an outpatient evaluation of “all” the neonates within 2–3 days after discharge home, with routine evaluation of peripheral pulses.

References

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