Pulse Oximetry Screening of Critical Congenital Heart Disease

The recent journal club article on pulse oximetry screening of critical congenital heart disease (CHD) in neonates [1] brings an important issue into a sharp focus. In the context of operational setting, the main barriers referred to were: false positive rates, lack of availability of echocardiography services, and lack of immediate palliative or corrective interventions. I wish to add the following comments:

1. *False-positive rates*: A recent systematic review [2] has shown that the false-positive rate for detection of critical CHD was significantly low when pulse oximetry was done after 24 h from birth than when it was done before 24 h (0.05% *vs.* 0.5%). Moreover, most screening studies have reported that a significant proportion of the false-positive babies (between 37% and 70%) had a serious non-cardiac condition [3,4]. The early identification of conditions such as pneumonia and infection, before the baby becomes unwell, may represent a 'secondary target' for screening and be an important additional advantage of the test.
2. *Lack of availability of echocardiography***:** A low saturation screen is not a trigger for an immediate referral for echocardiography. Rather, it should trigger an experienced clinical review, appropriate investigation and possibly a period of observation. Only, if the clinical pointers are towards CHD a referral for echocardiography would be warranted. Despite having access for an on-site echocardiography, recent post-implementation reviews [3,5] of this screening program reported only minimal extra burden to this service.
3. *Lack of immediate palliative or corrective interventions*: Pediatric cardiac intervention setups may be suboptimal in developing countries, but early identification of the babies with critical CHD before they collapse or become acidotic will definitely improve their outcome if treatment is available. Moreover, accurate diagnosis of the condition may have implications for future pregnancies.

This screening practice should be seen as a test of neonatal well-being and not just for critical CHD. This should become a standard of care, especially in regions with poor prenatal diagnostic infrastructure.

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