

Screening of Retinopathy of Prematurity: A Neglected Public Health Issue

Sir,

One of the prime causes of blindness in premature and preterm infants is retinopathy of prematurity (ROP) as determined in vision 2020 program.^[1] As globally the number of blind children figures to 1.4 million with 75% of them from third world countries, the global initiative for the elimination of avoidable blindness targets ROP for prevention of blindness and treatment in an effort to reduce the prevalence of childhood blindness.^[2] In developing countries with a human development index of 31-100, ROP is emerging as a major cause of blindness. Globally, at-least 50,000 children are blind as a result of ROP and an additional unknown number will be visually impaired or blind in one eye.^[2] As per WHO, 1 million blind children are in Asia, 0.3 million in Africa, 0.1 million in Latin America and 0.1 million in the rest of the world^[3]

It is estimated that 0.2% of childhood blindness in India is because of ROP.^[4] At present, the prevalence ranges from 0.81/1000 to 1.5/1000 in different states.^[5] The incidence of ROP in neonatal intensive care units (NICUs) or referral to tertiary care hospital in India ranged from approximately 21-40%. The emerging epidemic of ROP blindness in India is the result of high birth rate, high rate of preterm births and survival of low birth weight children due to the advanced and expanded provision of medical care.^[6]

ROP is a multifactorial disease, the immature retina of the preterm baby being the primary factor. It is one of the main avoidable causes of visual impairment in premature infants.^[7] The risk factors for the increased number of ROP are short gestation, low birth weight, sepsis, intra-ventricular hemorrhage, exposure to light, blood transfusions and mechanical ventilation. Factors, which affect the timely detection and treatment of ROP are compromised neonatal care due to limited and lack of resources, lack of awareness, lack of skilled personnel, financial constraints, lack of screening and treatment programs in the neonatal units. The diagnostic guidelines must take into account the local health-care facilities available for neonatal care. Though national screening program are available in many countries, but they are expensive and they are stressful to infants. RetCam™ (Clarity Medical Systems, Inc., CA, USA) examinations are gaining in popularity and are advocated by more and more practitioners. Advantages of RetCam screening include less discomfort for the infant,

easier manipulation and documentation of fundus changes. It is agreeable that this equipment is becoming more widespread not only in developed countries, but also throughout the world.^[8]

The increased survival of extremely low birth weight infants in recent years, due to advances in the neonatal care, has produced a population of infants at very high risk of developing ROP.^[9]

The disease rate is more severe in the middle and low income countries because we find babies with a wider range of weights and gestational age in these countries, which are found to a lesser extent in industrialized countries.^[10] The blindness owing to this relentless disease can be largely prevented by good screening program of early detection and timely intervention. A well-organized screening strategy can only be made if risk factors are known. In a recent paper from South India, the harmful effects of giving prophylactic unblended oxygen causing severe zone 1 ROP in big babies is highlighted. This should be realized by the pediatricians and giving blended oxygen could reduce severe ROP rates in these bigger babies drastically.^[11] A recent study provided the data indicating that general Ophthalmologists as well as non-Ophthalmologists (pediatricians and nurse practitioners) are independently reliable in detecting posterior pole changes in ROP babies, using direct ophthalmoscope and therefore can be provided with a screening protocol, which states the parameters for follow-up and referral of ROP cases. This shows that given adequate training, general as well as non-Ophthalmologists can appropriately refer cases of ROP needing treatment to secondary or tertiary level hospitals so that appropriate management can be instituted for them by the ROP specialists.^[12]

In India, more than 71.3% of the deliveries in low socio-economic status are home based in unhygienic conditions, majority by unskilled workers.^[12] Undoubtedly, a great number of newborns are either premature or low birth weight. All newborns that are at risk of contracting ROP have to be screened. But are the health workers aware of this? Not only this, though owing to globalization and medical advancement, health-care institutes both in public and private sectors have well-equipped NICUs, but screening and diagnosis of ROP is not routinely being done in all. It can be owing to varied factors such as lack of awareness of disease and its complication, lack of competency or unavailability of equipment. Moreover, taking into consideration the number of healthy life years lost and the amount of money that is siphoned for the treatment of newborns who develop ROP in comparison to the money being spent for screening of ROP, the screening seems to be both cost-effective and cost benefit effort. Screening making capable of early treatment of ROP is both efficacious and economically favorable. Owing to the high lifetime costs of severe visual impairment, the early treatment strategy provides long-term cost savings. Karen^[13] found that the cost-effectiveness of early treatment per eye

was \$14200 cost-effective along with preventing severe visual impairment and early treatment to more severely affected eyes was cost-effective by \$6200 per eye.

Undoubtedly, the Screening for “threshold” ROP has become obligatory following the confirmation of a significant benefit from treatment. Shouldn't it that awareness be generated about ROP by incorporating this component in national programs dealing with maternal and child health? Isn't it that more data has to be generated from both public and private sectors to have an accurate estimate of its burden? Isn't it that the competency of health-care providers and physicians has to be increased via training? Though, the guidelines for assessment of ROP were generated by WHO long back, but a wave of awareness of ROP has to be created before formulating some guidelines for its assessment in India.

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10.4103/2141-9248.131726