

Retinopathy of Prematurity – A Giant in the Developing World

RAJVARDHAN AZAD

Chief, VitreoRetina and ROP Unit, Dr RP Centre for Ophthalmic Sciences, All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110 029, India. E-mail: rajvardhanazad@hotmail.com

Retinopathy of Prematurity (ROP) is increasingly being recognized as an important cause of childhood blindness in industrialized and developing countries. This fact is further strengthened from the preventable nature of the disease as also the inherent economic burden it carries on any country's GDP. The cost of screening and managing an infant is much lower than the lost productivity cost on the state exchequer. A simple arithmetic indicates that a child having gone blind because of retinopathy of prematurity will remain so for 60 years (considering the average life expectancy in India). A moderate calculation will be Rs.2000 as maintenance cost and Rs.2000 as lost productivity cost, coming to Rs.4000 per month. The calculation for sixty years will be Rs.28,80,000 or 57600 US \$. The average cost of treatment of treatable ROP in our country would be around Rs.15,000 i.e. 300 US\$ (treatment charges and consumable items). Similar cost calculation and its implications are mentioned in a recent article(1).

Retinopathy of prematurity is a consequence of unmonitored oxygen therapy at ill equipped centers; another reason is the increasing survival of extremely low birthweight infants <800 g. In India, even heavier babies (>1600 g) and older gestational age babies (>32 weeks) also fall prey to development of ROP and sometimes to severe ROP(2). Additional risk factors contributing to this are septicemia, repeated blood transfusion, prolonged ventilation and chronic lung diseases(3), commonly ascribed to as the third factor. Most of the reports in literature

from India point towards this 3rd factor, the first one being the gestational age and second is birthweight. The shadow of 3rd factor is also evident in screening criteria or screening guidelines which are quite different than in the West. The cut off point for ROP screening in South Asian Countries is therefore considered as birthweight ≤ 1500 g and gestational age ≤ 32 weeks and is enough to include all children at risk to develop blindness due to ROP.

An important fallout of the extension of these guidelines means increasing the facility by way of opening more ROP centers in the country. Currently ROP is detected and managed in very few centers, that too in tertiary care hospitals; and accessibility of infants at risk is very difficult. Increasing manpower also means training the ophthalmologists in a highly specialized work and will need many logistics and also consume time. A quicker way to detect and refer these treatable or those babies at risk is to train general ophthalmologists, pediatricians and neonatal nurses to detect plus disease at posterior pole(4). Changes at posterior pole, especially plus disease is a very good indicator and correlates well with the occurrence of severe/treatable ROP.

At this juncture, most of the tertiary care centers are loaded with treatable ROP and majority of these are from out bound hospital or nurseries, since the understanding of disease and management is limited to larger metropolitan hospitals. This is a result of large scale referral from the unserved areas with physicians having low awareness of ROP as a disease and its progression to blindness.

Laser has emerged as a savior for preventing

retinal blindness in premature infants, although longer follow ups of these infants has shown myopia, and astigmatism of varying grades(5). Despite a good laser and clinically good looking macula, the visual acuity remains subnormal in some cases. A longer followup of these children is therefore needed to assess the structural and functional outcome of these eyes in both treated and untreated ROP. Late referrals, inadequate laser and progression of ROP despite laser further complicate this situation. Surgery though achieves ambulatory vision; early intervention, viable retina and optic nerve, and previous laser elsewhere offers better structural and functional outcome.

ROP today needs recognition, understanding and awareness among ophthalmologists, pediatricians, neonatologists, neonatal and ophthalmic nurses, and obstetricians to tackle this giant in the developing world.

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