



Retinopathy Prematurity *of*



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Ophthalmologist being trained on how to screen a preterm infant for ROP, at neonatal unit

Retinopathy of Prematurity (ROP) Epidemic

Retinopathy of prematurity (ROP) can cause irreversible blindness in premature infants. In India ROP has recently become a leading cause of blindness among babies “born too soon” due to increased provision of services for preterm infants in government Sick Newborn Care Units (SNCUs) and Neonatal Intensive Care Units (NICUs), as well as in private hospitals. Vision loss from ROP can be almost entirely prevented through good quality neonatal care, and by early detection and treatment of the sight threatening stages of the condition which can affect up to 10% of infants born at 34 weeks gestational age or less.

According to a recent estimate

- 3.5 million infants were born preterm in India in 2010 (Lancet, 2012), that is before completing 37 weeks of gestation.
- Nearly one in six, that is around 600,000 were born before 32 weeks gestation.
- If 40% of these infants are admitted to neonatal care units and 80% survive, this means that approximately 200,000 preterm infants are at risk of ROP every year. All these babies need to be screened for ROP.
- If 5-10% of the babies screened have sight-threatening ROP, 10-20,000 babies need treatment every year.

To reduce blindness due to ROP in India, an initiative is being led by the Indian Institute of Public Health, Hyderabad (IIPH-H), with support from UK’s Queen Elizabeth Diamond Jubilee Trust. The initiative has two broad strategies: to reduce the risk of ROP by improving the quality of neonatal care, and to train eye care professionals to detect and treat babies who develop the sight-threatening stages of ROP. In the first phase of the initiative a situational analysis was undertaken in eight states to identify SNCUs which admit a large number of preterm infants and which monitor neonatal care using the government’s SNCU database. Four States were then selected for the development of model ROP programmes, namely Telangana, Madhya Pradesh, Odisha and Maharashtra. In every state four to five SNCUs linked to one government medical college are being mentored by eye care providers and neonatal care providers who have the relevant expertise, in order to build the capacity of staff in the SNCUs and Medical Colleges. The quality improvement initiative is being led by senior neonatologists from All India Institute of Medical Sciences (AIIMS), New Delhi and Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. The eye care mentoring partners are from PGIMER, L V Prasad Eye Institute (LVPEI) Hyderabad, LVPEI Bhubaneswar, Narayana Nethralaya, Sankara Nethralaya and H V Desai Eye Hospital.

1. Strategies for prevention of sight threatening ROP

Giving antenatal steroids to mothers at risk of delivering a preterm baby can help to stabilize the infant. Preterm infants need careful handling right from birth, such as avoiding mechanical ventilation and 100% oxygen during resuscitation. This requires blenders and oxygen saturation monitors in delivery rooms. During the first three to four weeks of life, good quality neonatal care is required, to prevent infection, to ensure that the infant does not receive too much or too little oxygen and to ensure that the baby grows normally.

Eye drops being given to a preterm infant before screening for ROP



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An infant brought for ROP follow up screening to the neonatal unit

2. Strategies to detect and treat sight threatening ROP

Two approaches can help detect sight threatening ROP: regular weekly visits to neonatal units by ophthalmologists skilled in indirect ophthalmoscopy, or weekly visits by technicians trained in retinal imaging using appropriate imaging systems. As imaging systems are very expensive this approach is not being supported in the Trust supported program.

Once sight threatening ROP is detected treatment must be given within 48 hours by highly skilled ophthalmologists. Laser treatment is recommended for most babies.

National task force constituted on ROP

A National ROP Task Force has been set up under the project to coordinate and guide the national programme. The Task Force was constituted by the Government of India and is chaired by Ms Vandana Gurnani, IAS, Joint Secretary, Ministry of Health and Family Welfare (MOHFW). Other Task Force members include representatives of professional associations, clinicians experienced in neonatology and ROP, and representatives from UNICEF and Rashtriya Bal Swasthya Karyakram.

Baby being screened for ROP using indirect ophthalmoscope



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Activities being undertaken by the Trust supported ROP project

- Developing and implementing an advocacy and communication strategy for policy change and to increase awareness and resources for control of ROP;
- Building models for the detection and treatment of sight threatening ROP which are embedded in the government health system in selected states. Medical colleges and district hospitals with established SNCUs have been identified for the project in 4-5 states in the first instance;
- Increasing the capacity of neonatal teams in the government sector to improve infant care in selected states;
- Increasing awareness of ROP among relevant professional groups i.e. obstetricians, neonatologists, neonatal nurses, pediatricians and ophthalmologists;
- Developing and implementing an information, communication and education strategy to support parents of preterm babies;
- Disseminating information and educational materials to a range of audiences through a dedicated website.

An anxious mother handing over her baby to the ophthalmologist for ROP screening in the neonatal unit



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Team of ophthalmologists from LVPEI training their counterparts at Niloufer hospital

Key messages

- Every mother who may have a preterm delivery to be given antenatal steroids
- Every preterm infant should undergo screening within first 30 days of life or before discharge, whichever is earlier
- Infants born 34 weeks or earlier, or weighing 2000 grams or less should be examined for ROP
- Avoid unnecessary oxygen supplementation and monitor oxygen levels
- Aseptic protocol to reduce the risk of infection
- Risk factors should be constantly monitored by health personnel



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Ophthalmologists across the country have been trained to screen and treat ROP



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Training neonatal teams to provide good quality care is a key element of the programme as this reduces the risk of sight threatening ROP



To know more about the ROP initiatives under the programme, please contact or email us at rop.india@iiphh.org, or write to us at Indian Institute of Public Health, Plot #1, A.N.V.Arcade, Amar Co-op Society, Kavuri Hills, Madhapur, Hyderabad.



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