

SHORT COMMUNICATION

Retinopathy of Prematurity Campaign in Bangladesh: Experience and Lessons LearntRani PK^{1*}, Padhi TR², Choudhury N³, Ali TR³, Jalali S¹, Prabhavathi L¹

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Summary

Retinopathy of Prematurity (ROP) is a potentially avoidable cause of irreversible blindness or severe visual impairment in many infants born premature. The global incidence of premature birth has been reported to be 11.1 per 100 livebirths in 2010. The present communication share the experience and lessons learnt during a Neonatologist-Ophthalmologist Retinopathy of Prematurity (NO-ROP) campaign and ROP situation analysis in Bangladesh. A weeklong workshop was organised in May 2016 in Dhaka for the paediatricians and ophthalmologists of the country involved in ROP care. This included a programme to train the attendees on basic to advanced ROP care. Finally, a half day session was organised for the government stakeholders, non government organisations, obstetricians, neonatal and child health care providers and ophthalmologists to assess the level of awareness, the gaps and any obstacles for an effective ROP care in the country. Besides, two neonatal units were visited to assess the ROP situation at district levels in Bangladesh. The observations were documented and recommendations suggested. The awareness and resource availability for ROP care was disproportionately less compared to the demand even in Dhaka. At the district levels, the ROP care mostly did not exist. However, the eagerness to help, support and bridge the gaps was tremendous both among the government and non government organisations. There is an urgent need to strengthen and expand the existing ROP services in Dhaka as well as at the district levels. The observations made and lessons learnt could go a long way in combating ROP blindness in Bangladesh and in other developing countries.

Keywords: Retinopathy of prematurity (ROP), Awareness, Neonatologist, Ophthalmologist

Background

Retinopathy of prematurity (ROP) is a potentially avoidable cause of irreversible blindness or severe visual impairment in many infants born premature. Its prevalence varies among races and geographic areas depending on the survival rate of neonates and level of perinatal care. Once upon a time, ROP was a disease of the developed countries but with improved neonatal care in developing countries like India and Bangladesh, more and more premature babies are surviving with ROP. The global incidence of premature birth has been reported to be 11.1 per 100 livebirths in 2010.¹ Over 60% of preterm births occur in sub-Saharan Africa and South Asia where 9.1 million births (12.8%) annually are estimated to be preterm.¹ Globally, there are

estimated to be 60,000 children who are blind from ROP.² The burden is likely to increase in developing countries as their economies improve, and neonatal intensive care services expand. Blindness from ROP has been given a priority for control in Latin America, Eastern Europe, and urban areas of Asia.³

Bangladesh is a developing country like India with increasing premature births but lesser infant mortality rate than India.^{2,4,5} With 14 out of 100 babies born premature, Bangladesh was ranked 7th on the top-10 country list for high preterm birth rates in 2010.^{2,9} The incidence of retinopathy of prematurity (ROP) in different regions in India has been reported to range between 38 to 47.27%.^{3,6-8} Unlike in India, data on the incidence and severity of ROP and treatment requirement is scarce from Bangladesh with a few

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small scale studies from few centres at Dhaka-the capital city reporting it to a range from as low as 4.4 to as high as 40%.^{5,9,10} ROP service is almost nonexistent at district levels outside Dhaka. Country specific guidelines for screening of ROP and a protocol based programme for ROP care are almost nonexistent. The objective of the present study was to share the experiences and lessons learnt during a Neonatologist-Ophthalmologist Retinopathy of Prematurity (NO ROP) campaign in Dhaka and a ROP situation analysis in Bangladesh.

The Process

With an initiative from the Government of Bangladesh and 2 ROP trained retina specialists (NC,TRA) at Bangabandhu Sheikh Mujib Medical University (BSMMU) a weeklong National workshop on ROP was organised in Dhaka during 14-20 May 2016 in partnership with LV Prasad Eye Institute, India. The experiences and observations were documented and analysed to help create strong and wide NO-ROP teams across Bangladesh. There were 20 participants including general ophthalmologists, paediatricians, paediatric ophthalmologists, retina specialists, ophthalmology residents and neonatologist. The workshop covered Binocular Indirect Ophthalmoscopy (BIO), ROP retinal drawing, quality care of a prematurely born baby, screening guidelines and methodology and finally hands on laser. A structured questionnaire with 20 points was used to assess the acquired KAP of the participants in the screening and management of ROP through the workshop. The question set was a modified version of the ones used in a previous study published from South India.¹¹ The pre and post training KAP scores were compared. The participants were divided into two groups. Group-1 included ophthalmologists having experience of ROP screening and management and Group 2 without exposure to ROP screening or indirect ophthalmoscopy. At the end of the workshop, the participants were provided workshop materials. Additionally, one among the visiting faculties visited two newborn care units at a nearby district-Mymensingh in Bangladesh (sponsored by Orbis International) to do a situation analysis with respect to the demand as

well as available ROP care. A half day national scientific programme on ROP, sponsored by the Government was organised for the obstetricians, gynaecologists, paediatricians, neonatologists, ophthalmologists and policy makers of the Bangladesh Govt and different Non Government Organisations (NGO).

Lessons learnt

The participants scored 09 (3 to 16.5) and 16.1 (6.5 to 20) in the pre and post workshop KAP questionnaire respectively showing a positive impact. The government was very proactive and was ready to support any ROP care or training. The NGOs were very keen to move forward and extend their support in ROP care. In addition to the paediatricians, the participation from obstetrics community was also inspiring. Active participation of all stakeholders (Government and nongovernment officials, public health professionals, paediatricians, obstetricians and ophthalmologists) was observed in the day long national symposium on ROP. They were keen to disseminate ROP related information through their medical professional society souvenirs and through medical professional society social media groups. Policy makers readily accepted the idea of including ROP related information in the routine teaching curriculum of under graduate and postgraduate medical students, paediatric residents and nursing staff. In fact, it was observed such initiation to have already started in the form of handouts on ROP for community health workers at villages. A good quality ROP care was observed in few centres in Dhaka. However, ROP care was almost nonexistent outside Dhaka despite turnover of a number of premature babies.

The observations made at one Government and one private unit in Mymensingh. ROP care was almost nonexistent despite a number of babies at risk (table I). Orbis International was eager to support the training of ophthalmologists in ROP and provide infrastructure for a ROP tele-screening programme including a paediatric retinal camera. It may be mentioned here, between the year 2010 and 2016, 78 babies travelled to LVPEI, India for ROP treatment from Bangladesh, and 90.0% of these were in stage 5 retinal detachment (One of the co-authors unpublished data).

Table I: Situational analysis of ROP network at a district in rural Bangladesh

	Govt. Medical College	Private Medical College
Paediatric Unit	Special Care Newborn Unit (SCANU)	20 Bedded level II NICU
Approximate no of babies admitted per month	2000	500
Babies eligible per criteria for ROP screening	800 (40%)	200
Babies likely to have ROP applying ROP statistics from Eastern India ⁵	280 (35%)	70
Approximate no. of subjects with sight threatening ROP	40	10
Babies surviving with blindness (at an IMR of 32.9 per 1000 livebirths)	38	09
Duration of Stay	Short Forced to get discharged as early as possible because of bed shortage against high demand	Very short Majority get discharged as early as possible because of bed shortage
Ophthalmology department	Yes	Yes
Experience on direct Ophthalmoscopy	Yes	Yes
Ophthalmologists experienced on I/O	None	None
Eagerness to learn I/O and ROP screening	+	++
Access to I/O trained ophthalmologist (3months training in medical retina) within the same district	Yes	Yes
Nearby ROP trained specialist	At Dhaka 130 km away 6hrs journey to and fro in standard Bangladesh Traffic	At Dhaka 130 km away 6hrs journey to and fro in standard Bangladesh Traffic
Pediatrician awareness for ROP	+	++
Eagerness of Govt Stake holders to initiate and support the ROP program	Yes	Yes
Eagerness of NGOs like Orbis to sponsor and support the program	Excellent	Excellent
Feasibility of ROP trained specialist to visit and take care of the ROP services	Feasible once a while. But not sustainable for long...because of travel time and poor incentive as most of them are in private practice	Feasible once a while. But not sustainable for long...because of travel time and poor incentive as most of them are in private practice

Discussion

A significant number of babies are at risk of ROP and ROP related blindness in Bangladesh. The manpower skilled in ROP care is disproportionately less to tackle the challenges even in Dhaka. There is a need of mandatory training in indirect ophthalmoscopy and ROP care for selected ophthalmologists both at Dhaka as well as from the districts outside Dhaka. More workshops of similar kind should be conducted periodically not only in Dhaka but also at district levels. There is a great motivation among the Government and NGOs and the eagerness to move in ROP care was very good which could be banked upon to tackle the existing situation in this country. This local ophthalmologist led ROP screening model would be cost effective and self sustainable

The present situation in Bangladesh could have been largely avoided if had ROP been there in the agenda right at the onset of establishment of sick newborn care units in the country in 1980-90. Setting up Special Care Newborn Units (SCANU) to save newborns should include ROP programme. ROP being an iatrogenic disease has

to be incorporated in the critical care of newborns at every newborn care centre and should not become an add-on later once one or more ROP blind babies appear in the community. It is as critical as the polio immunisation- one protects limb disability and one the visual disability; it is denying a newborn baby the RIGHT to SIGHT if ROP screening and treatment plans are not put in place along with the plan for the survival of newborns. Curriculum introduction, quality preterm care and training of key personnel have to be made mandatory when a child care facility for preterms is set up in any part of the world. Once a preterm baby survives, ROP follows which has been amply demonstrated from the first case of retrolental fibroplasias reported in USA and then the epidemics of ROP in Latin America, China and India. Lessons learnt here, may be taken to prevent the situation in future in other developing countries.

Conclusion

There is an urgent need to strengthen and expand the existing ROP services in Dhaka and initiate the same at the district levels. The observations made and lessons learnt could go a long way in

combating ROP in Bangladesh and in other developing countries.

Conflicts of interest: The authors do not have any conflict of interest.

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