A Study For Evaluation Of Gap Between Paediatricians And Ophthalmologists For Retinopathy Of Prematurity Management In Western India

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Abstract: Background: To study gap between paediatricians and ophthalmologists for management of retinopathy of prematurity (ROP) and apply it in better policy makings to prevent irreversible vision loss in the affected preterm babies. Material & Methods: In this cross-sectional observational study,100 paediatricians of western India were asked about educational and practicing profile, knowledge regarding ROP screening guidelines, risk factors and potential outcomes, referral facilities available in their localities and barriers for referral. Chi-square test was used and a P value of <0.05 was considered as statistically significant. Results: All (100%) knew about risk factors for development of ROP. Awareness regarding timing of screening was found in 82% urban and40% rural practitioners. 74% urban practitioners knew about treatment modalities but only 50% rural paediatricians were aware about this. Only 14% urban practitioners were facing problem in referral in contrast to 60% rural practitioners. Majority (70%) said unavailability of a trained ophthalmologist was the barrier in the referral. Conclusion: Majority of paediatricians in western zone of India were aware of risk factors but had less information about ROP screening timings and treatment modalities. This suggests need for creating awareness and close coordination between paediatricians and ophthalmologists especially in rural localities. [Prajapati V Natl J Integr Res Med, 2020; 11(6):7-10]

Key Words: Bridging gap, Laser treatment ,Referral facilities, Retinopathy of prematurity

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Introduction: Retinopathy of prematurity (ROP) is a vasoproliferative disorder of the retina occurring principally in new born preterm infants. It is an avoidable cause of childhood blindness.[1,2,3]

With the increase in the survival of preterm babies, ROP has become the leading cause of preventable childhood blindness throughout the world. Its prevalence is 30% in developing countries in preterm newborns.[4] Risk factors are low birth weight, prematurity, multiple births, oxygen therapy, sepsis and overall poor health of the infant.[5]

This development of the disease is stage wise and there is a very narrow window of opportunity for treating this babies and the condition can quickly progress to blindness. A simple screening test done within a few weeks after birth by an ophthalmologist can avoid this preventable blindness. Screening plays a major role in not only identifying babies at risk with their close monitoring but also in treating the babies already presenting with sight threatening disease.[6]

Although screening guidelines and protocols are strictly followed in the developed nations, it lacks in developing economies which have the highest number of preterm deliveries in the world. The burden of this blindness in these countries is set to increase tremendously in the future, if corrective steps are not taken immediately. Many paediatricians do not refer high risk neonates to the ophthalmologists due to lack of awareness.[6]

The main aim of this study is to identify the gap between the attending paediatrician who is the first contact physician for the preterm baby and the ophthalmologist who is the final treating physician for preterm babies with retinopathy of prematurity (ROP). Strategies can then be built to decrease this gap to decrease this burden of preventable blindness in the society.

Materials And Methods: Ethical measures were adhered to throughout all phases of the research. The study was conducted among paediatricians across all the setups with MCI approved degrees in across Gujarat state. All other doctors and paediatricians not willing to participate were excluded. Ours was a cross-sectional observational study with a sample size of 100 paediatricians.

Informed consent was taken prior to questionnaire for all the respondents. At no point of time, the identity was revealed of the participants. Questionnaire had following points which is attached in annexure in detail:

- Demographic data of the respondent along with practice setup
- Average number of preterm babies consulted within a month
- Risk factors for development of ROP
- Potential visual outcomes of ROP for the child with and without treatment
- Timing to initiate treatment
- Awareness regarding any medical risks involved in screening and treatment
- Awareness regarding irreversible blinding potential of the disease
- Current screening guidelines of ROP
- Whether they refer the at risk babies for ophthalmology screening or not and if yes, timing of referral
- Barriers of referral
- Referral facilities available in their localities

The collected data was entered in the Excel sheet and was subjected to statistical analysis. The Chi-square test was used to test the association between different variables wherever applicable and a P value of <0.05 was statistically considered significant.

Results: The study included 100 paediatricians with mean age of the cohort being 35 years. Eighty six were male and 14 were female paediatricians. Out of 100 respondents, 72 (72%) respondents were private practioners and the rest 28 (28%) respondents were government practitioners. Out of 100, 70 practioners were settled in urban area and the rest 30 were practicing in rural area.

All 100 (100%) paediatricians included in the study were well aware of the possible risk factors for development of ROP which was a very positive result. (Table 1)

Table 1: Awareness Regarding Risk Factors For ROP Development:

Group	Urban Paediatricians	Rural Paediatricians
Knowledge Present	70	30
Knowledge Absent	0	0

But the saddening fact to be found out was that only 12 (40%) paediatricians practicing in rural area were aware of the ideal screening timings in comparison to 58 (82.85%) urban paediatricians who were vell versed with it. This association was significant statistically with P value being 0.00001822. (Table 2)

Table2: Awareness Regarding Timing Of ROP Screening

Group	Urban Paediatricians	Rural Paediatricians
Knowledge Present	58	12
Knowledge Absent	12	18

Out of 100 paediatricians from our study, 52 (74.28%) urban paediatricians were aware of primary treatment modalities available for ROP whereas in rural practitioners, only 15 (50%) paediatricians had knowledge regarding this. With P value being 0.01795, this was found to be statistically significant.

When we inquired in detail, out of 100 paediatricians, 90(90%) paediatricians were aware of conservative management for ROP. Whereas awareness regarding laser photocoagulation, intravitreal injection anti-VEGF and surgery as the treatment modalities available was present in 67 (67%), 45 (45%) and 36 (36%) paediatricians respectively.

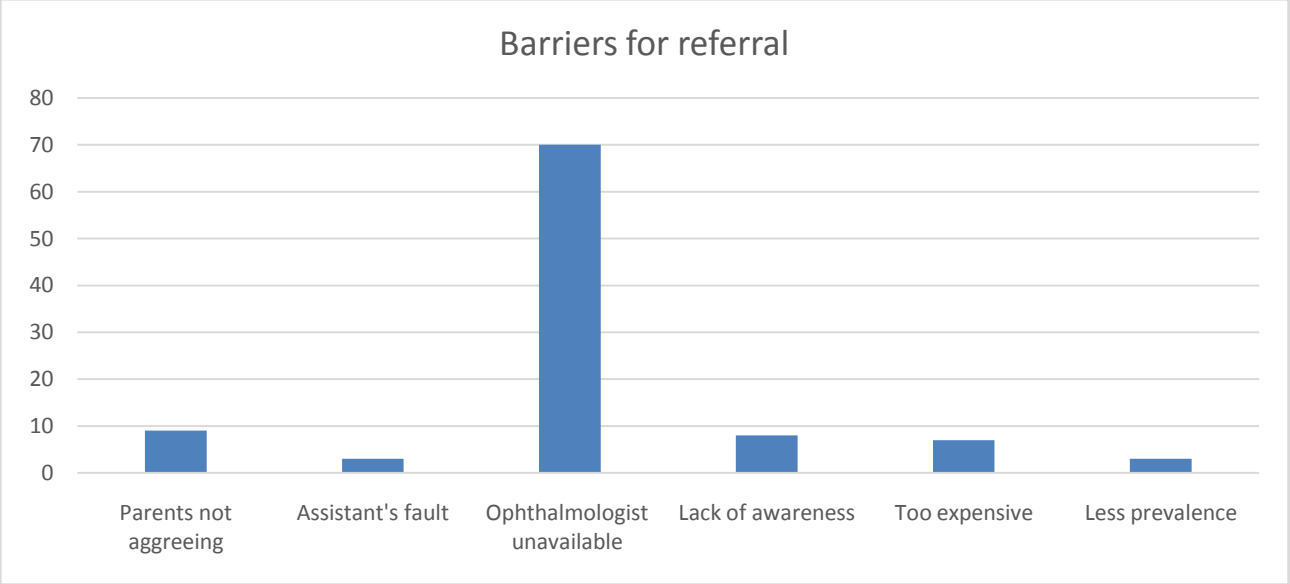
When paediatricians were inquired about whether they were facing any barriers in referral for ROP screening and management, only 10 (14.28%) urban paediatrician admitted to this in contrast to 18 (60%) rural practitioners.

This reflects poor medical health care infrastructure in rural setups in our country. P value of this association is 0.0000308 which is again significant statistically.

When we inquired in detail regarding causes of this barriers for referral, 70 (70%) paediatricians said unavailability of the trained ophthalmologist in ROP screening and treatment was the reason. (Graph1)

Discussion: Owing to the preventable nature of ROP early in its course, a good screening protocol is pivotal. The goal of screening is to detect sight threatening ROP which is within the window of opportunity for the optimal application of proven therapy. For the paediatricians, clear ROP screening guidelines

Graph 1: Barriers For Referral For ROP Screening And Management



can guide them not only to identify at-risk preterm babies but also their prompt referral so that potential blindness can be avoided before its irreversible stage.

In our study, we found that all the participants had awareness of risk factors for ROP(100%). 82.85% urban participants had knowledge regarding screening timing and ophthalmology reference for ROP, but only 40% of the rural participants had this knowledge(p=0.00001822). In total 67% of the participants were aware about laser treatment for ROP, but only 50% of the rural participants were aware as compared to urban participants(74.28%) which was statistically significant (p=0.01795). Overall 28% of the participants were facing barrier for ophthalmology reference for ROP in which 60% were rural participants and 14.28% were urban participants (p=0.0000308).

Rani and Jalali et al (Knowledge attitude practice study of retinopathy of prematurity amongst paediatricians attending a neonatal ventilation workshop in south India. Proceedings of World ROP Congress; 2009 November 21-23; New Delhi, India. New Delhi: Paras printers; 2009) did a similar study on 38 paediatricians attending a neonatology ventilation workshop in Hyderabad. All were urban practitioners in their study. In that study, they found that 100% of paediatricians knew about the risk factors of ROP which was similar to our study.68% paediatricians knew about laser photocoagulation as a treatment modality in their study similar to our study (67%). 50% of the participants were found to be facing issues in ophthalmology reference in their study,whereas in our study only 14% urban practitioners said they were facing issues in referral.[7]

Kulkarni et al. did a study in pune in which(Knowledge attitude and practices of retinopathy of prematurity amongst various stakeholders in western Maharashtra. 80% of the pediatricians knew about the risk factors of ROP compared to 100%% in our study. 93% of the pediatricians knew that timely treatment can prevent ROP related blindness, compared to 40% rural practitioners and 82.85% urban practioners in our study.[7]

In another study done by S. R. Sathiamohanraj et al[7], 83 paediatricians participated. 18% were government participants and 82% were private practitioners. only 57.8% were aware of risk factors of ROP in contrast to our study where all were well versed with it (100%). 55.4% had awareness of laser treatment as compared to our study (67%). 39.8% believed that ROP is preventable and 51.8% believed that ROP is treatable.[7] In contrast to this study, majority of paediatricians in western zone of India were aware of ROP risk factors but had less information of ROP service delivery and treatment modalities.

Our study suggests the need for creating awareness and close coordination between paediatricians and ophthalmologist to address

the barrier for screening and service delivery for ROP. Rural paediatricians were facing problems in ROP screening and reference. So ROP awareness programmes should be created for rural paediatricians. There should be weekly visit of urban paediatricians to rural area for ROP screening to avoid unavailability of a trained ophthalmologist being a reason for blindness caused by the disease.

We recommend publishing articles in medical magazines and medical journals, including ROP seminars in national paediatric conferences and have frequent continuous medical education programs in government and private hospitals. The Indian Academy of Paediatrics (IAP) can take the lead at the national level to see that ROP awareness is spread uniformly amongst the paediatricians in India.[8]

Conclusion: Simple screening employed at appropriate stage can prevent irreversible blindness in preterm infants. Main reasons for failure of referral of newborns are lack of knowledge among paediatricians and unavailability of a trained ophthalmologist in ROP screening and management. This problem is of much greater magnitude in rural area. Bridging this gap by forming various strategies foe awareness among paediatrician and weekly vivits of ophthalmologists in rural area will certainly help in decreasing this irreversible blindness load in society.

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