

Research Article

Evaluation of Basic Knowledge of Retinopathy of Prematurity: A Multi-Disciplinary Study

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Citation

Zafar D, Noman, N, Zeeshan, Sharjeel M. Evaluation of Basic Knowledge of Retinopathy of Prematurity: A Multi-Disciplinary Study, *Health Sciences Journal*, 2022, 1(1), 1-6.

ABSTRACT:

Aim: To evaluate the basic knowledge of doctors about retinopathy of prematurity, dealing mostly with ROP in pediatric and ophthalmology departments.

Study Design: Quantitative, cross sectional study

Place and Duration: Ayub Teaching Hospital Complex, Abbottabad From 1st April 2022 to 8th April 2022 (one-week duration)

Material and Methods: After explaining the whole scenario to the participants, an open ended questionnaire through an in-house survey was handed over to them which contained different questions regarding ROP. Data response was saved, evaluated and then analyzed in terms of percentages of response. Paired t-test was used as test of statistical significance. Excel spreadsheets and SPSS v.25.0 were used wherever required.

Results: Total number of subjects were 57 in which 23 (40.35 %) were males and 34 (59.65%) were female. Majority of the doctors were house officers 27 (47.37%) followed by residents 20 (35.09%) and consultants 10 (17.54%). Mostly were from pediatrics department (67%) followed by ophthalmology department (31%). 94% had basic knowledge about ROP. About 48 % were unaware about screening protocols for ROP and 50% were unaware about treatment modalities.

Conclusion: ROP is very ignorable entity especially for doctors working in neonatal ICU. Majority of doctors don't have proper awareness about disease and need to be trained well about screening protocols in order to prevent and manage the disease by proper and timely referral to ophthalmologist for further planning.

KEYWORDS

Retinopathy of Prematurity, premature infants, knowledge, pediatrician, ophthalmologist

1 | INTRODUCTION

Retinopathy of Prematurity (ROP) is the disease of retina affecting preterm babies with low birth weight. It is one of the most common causes of blindness in infants and children.¹ ROP affects preterm infants at or before 32 weeks of gestation with 1500 gram or less birth weight.² Retina and its vessels fully develop in term babies, that's why preterm babies are affected only. Estimated 14000 babies per year are affected in United States with this disease.³ The major risk factors for development of ROP are low gestational age and birth weight. Moreover, use of oxygen in premature babies and respiratory distress can add to existing damage.⁴ ROP is categorized into 5 stages along with pre-plus, plus disease and APROP based on features of differentiation between vascular and a vascular retinal areas and progressive fibrosis leading to retinal detachment.⁵ Since the treatment depends on stage of ROP, so screening of preterm newborns with low birth weight for ROP in neonatal intensive care units (NICUs) is very important for disease prognosis.⁶ Screening protocols are already established by American Academy of Pediatrics and American Board of Pediatrics Ophthalmology to ascertain the better outcome for these babies. All babies with birth weight of 1500grams or less and/or gestational age of 30 weeks or less should be screened for ROP.⁷

ROP is a foreclosable cause of blindness among children. The effective screening and timely diagnosis has traditionally resulted in better outcome in infants. Therefore, it is needed to effectively diagnose the cases in time. But unfortunately, the rate of ROP has increased within the last few decades.⁸ The pediatrician is first one dealing with preterm infant so it is needed to sensitize them for this alarming situation of preventable loss of vision. A multidisciplinary approach is required. Since both pediatricians especially neonatologists and ophthalmologists are involved, so it is understood that their combined effort can result in better outcome.^{9,10} To my knowledge no study has been conducted till date on basic awareness of ophthalmologist and pediatrician about ROP in my setup. So main objective to conduct this study was to get basic concept of background knowledge of first line health care providers to the preterm babies, analyze the depth of that knowledge and replete the flaws and gaps (if any) wherever and however necessary, in order to improve the overall management plans in dealing with cases of ROP.

2 | MATERIAL AND METHODS

2.1 | Research Design

It was a quantitative, descriptive cross sectional study.

2.2 | Population & Sampling

It was conducted at Ayub Teaching Hospital Complex, Abbottabad from 1st April 2022 to 8th April 2022 (one-week duration).

2.3 | Data Collection

Data was collected through in-house survey in a pre-workshop conducted for ROP awareness at Ayub Teaching Hospital arranged by ophthalmology department. All the doctors who showed willingness to participate in the study were included in the survey. After explaining the whole scenario to the participants, a questionnaire was handed over to them which contained different open ended questions which mainly focused on recognizing basic knowledge, treatment and referral protocols regarding ROP.

2.4 | Analysis Technique

Data response was saved on Microsoft Excel sheets, was evaluated and then analyzed using SPSS v.25.0. Paired t-test was used as main test for statistical analysis with p-value of less than 0.05 considered as statistically significant. Results in terms of percentages of response were used in final composition.

3 | RESULTS

Total 57 participants were questioned, 23 were male and 34 were female (Table 1). Minimum age of participants was 24 years while maximum was 45 years. 38 doctors were from pediatrics department, 18 from eye department and 1 from radiology (Figure 1). Only 10 of 57 were working as consultant the rest were working as postgraduate trainees and house officers (Figure 2). Majority of the participants answered satisfactorily with base line knowledge about ROP. The rest of the answers to different questions are described in Table 2.

TABLE 1 Frequency Distribution of Gender

	Male	Female	Total
Number	23	34	57
Percentage	40.35 %	59.65 %	100 %

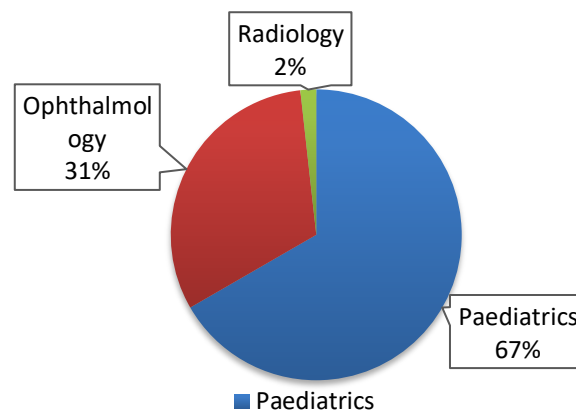


FIGURE 1: Contribution of Doctors from Different Departments

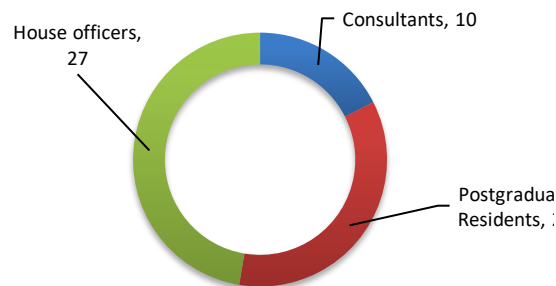


FIGURE 2: Designation of Contributing Doctors

TABLE 2 Responses to Different Questions in Terms of Percentage

#	Questionnaire	Percentage of Response
1	Baseline knowledge about ROP	94 %
2	'Yes' answer to ROP being preventable disease	97 %
3	Awareness about which part of eye is effected in ROP	91 %

4	Awareness about when screening for ROP should be started	48 %
5	Awareness about treatment modalities	50 %
6	Awareness about direct ophthalmoscopy procedure	30 %
7	Satisfaction with general awareness about ROP	75 %
8	Opinion regarding poor patient counseling about ROP	75 %
9	Awareness about who should be screened	50 %
10	Parent's unwillingness for treatment is barrier	30 %

4 | DISCUSSION

ROP is disease of infancy adversely affecting the future of a newborn.¹¹ Estimated 1.4 billion eyes are blind because of ROP, which is more prevalent in underdeveloped countries and it is rapidly becoming the leading causes of preventable blindness in childhood due to scientific advances in field of medicine allowing more and more preterm babies to survive.^{12,13} ROP trends are going up in Pakistan, and poor screening is one of the reasons for increasing number of cases day by day. Incidence of ROP is not well established yet, but some studies done previously at some centers shows 10.5% to 32.4%.^{14,15} In our opinion, it is still under diagnosed because we lack in keeping good records, screening is not proper and multidisciplinary approach is still not developed for proper screening and management of the disease. To develop multidisciplinary team work for screening and management of ROP in only tertiary care hospital of Hazara division, a workshop was conducted for pediatric department. Pre workshop basic knowledge of participants about ROP was checked through questioner.

In our study 91% of the attendee were aware which part of the eye is involved in ROP, which is comparable to 90.2% in study conducted in Saudi Arabia.¹⁶ Knowledge regarding ROP as preventable disease in our study 97% answered satisfactorily as compared to study conducted in center at Saudi Arabia (75.6%).¹⁶ 94% of our attendees had good basic knowledge regarding ROP but 48% were unaware when screening should be started for ROP though it was better than previous study conducted by Albalawi et al (75%).¹⁶ The alarming thing noted in our study is that 30% of the participants were not knowing, how to perform direct ophthalmoscopy, which is again a major barrier in proper screening and diagnoses of patients. 75% of the participants were not satisfied with current screening status of ROP practices. 75% of participants agreed that poor counseling of parents at time of discharge is a big barrier for ROP screening in our setup. 22% of the participants highlighted that parents are not willing for further treatment and follow-up is the reason for poor screening of patient. As most of the attendees were from pediatrics department in our study, it is very unsatisfactory that 42% of the participants were not aware who should be screened. These all results were almost consistent with previous studies.^{17,18} 33% of the participants claimed that not availability of ophthalmologist and poor team work is leading to poor screening for ROP in our setup.

5 | LIMITATIONS AND FUTURE DIRECTIONS

This study's main limitation is small sample size and even smaller duration. To have a greater future impact, a vast multicenter study with more sample size needs to be conducted. Since ROP is more prevalent in developing or underdeveloped countries, it leads to financial burden on a country's economy for support of this blind future. Proper awareness campaigns should be conducted especially among pediatricians who are usually first responders to this disease and should be encouraged to refer such patients to ophthalmologists who, then can confirm diagnosis and start treatment promptly.^{19,20} It is the need of the time that we should use the opportunity of working in tertiary care hospital for development of team work to screen and manage ROP patient more efficiently to decrease the burden on the society and give a ray of hope to our future.

6 | CONCLUSION

Retinopathy of prematurity is a very ignorable entity especially for those pediatric doctors and neonatologists who work in NICUs. Majority of those doctors neither have proper knowledge and awareness about this disease nor do they vastly know about screening, treatment and referral protocols. These doctors especially pediatricians need to be trained well about screening protocols through workshops and lectures in order to prevent and manage ROP in babies who are on oxygen therapy in NICUs by proper and timely referral to ophthalmologists for further planning.

Ethical Approval

No ethical approval was required for this study.

Conflict of Interests

None declared.

Funding

None

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