

A Cross Sectional Study on Causes of Premaure Retinopathy in Preterm Babies

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ABSTRACT

Objective: The causes of severe visual impairment and blindness in the developing country are related to the infant mortality rate because the underlying causes are related to each other. This study was conducted to observe the main causes of blindness in newborns, premature retinopathy.

Place and Duration: A study was conducted in the Department of Neonatology and Department of Ophthalmology between February 2016 to February 2017 in Nishter Hospital, Multan for the period of one year.

Study Design: It is a cross-sectional study

Methodology: Retinal examination was performed by ophthalmoscope of all premature babies born before the gestational week. for the development of hypothermia and premature retinopathy after the first treatment of electrolytes and nutritional rehabilitation. Detection continued until the normal development of the retina after being discharged from the hospital.

Findings: During the study, 350 premature babies were admitted, 144 were lost, 56 were lost during follow-up, and 150 babies were detected. ROP was detected in 67 babies. 14 had type I and 53 had type II disease. There were 5 stage II patients, 6 stage III patients and 3 stage I patients, in type I disease. All Type I disease laser therapy and inj. According to Avastin's disease, as determined by the ophthalmologist. The babies underwent a satisfactory vision improvement after therapy.

Conclusion: ROP is a preventable cause of blindness in children. Appropriate use of the oxygen protocol in premature infants may prevent ROP in the majority of premature infants. Over time, diagnosis through accurate detection can identify this disease at an early stage. Laser therapy and management of treatment with injection. Avastin can help correct normal vision.

Key words: Retinopathy, blindness, preterm babies

INTRODUCTION

The right to see for every child WHO VISION 2020 is a slogan equal to the blind loss in adults who have catarata due to the number of years of blindness in children. Mortality is often responsible for the causes of blindness in children, such as premature rheumatoid arthritis (ROP), prematurity, asphyxia, meningitis, measles, rubella, and vitamin A deficiency. Most of these causes can be avoided so that joint efforts of pediatricians and ophthalmologists is necessary.

The incidence of total blindness in children is 2.5 per 100 000 children, but most cases are reported in the first year of life is significantly higher in developing countries with a low incidence of birth defects, inadequate nutrition and ocular infection due to the incidence of severe vision loss and blindness. Failure to normal visual matured (amblyopia) is not immediately correctable in later life, so it does not necessarily apply to adults' conditions. There is an urgent level in the treatment of childhood eye disease. is

significantly higher in developing countries with a low incidence of birth defects, inadequate nutrition and ocular infection due to the incidence of severe vision loss and blindness. The actual incidence of PR is not available, but local data published in Pakistan suggest that low birth weight and premature infants are 32.5% in the infant population of premature retinopathy. Newborn care services have expanded and more premature babies survive. In Pakistan the infant mortality rate (IMR) cut down to 61.4 per 1,000 alive births in 2000, from 83.05 in 2001, so Pakistan is now on the verge of a blindness epidemic at ROP. The present study was conducted in a tertiary-level unit to monitor the incidence of RP for total admissions. It will help to design a standard care protocol for the management of premature infants related to ROP.

METHODOLOGY

It is a cross-sectional study in the neonatology department of the ophthalmology department and pediatrics department of Nishter Hospital, Multan. All premature babies born before the 34th week of pregnancy were included in this study. The babies were examined by an ophthalmologist after the initial stabilization of all acute problems. The first examination is done 15 days after birth and then weekly. Ophthalmology performed by an ophthalmoscope for changes in retina and was recorded accordingly. Babies in need of

intervention were delivered to the eye unit for further use. Babies who were discharged in terms of newborns were called up weekly for the revision of ROP retinal changes.

RESULTS

The study was conducted between February 2016 to February 2017. A total of 1,500 babies participated in the new section of the children's section. While premature infants were 350, they were in full period of 1029. Of all premature infants, 92 infants lost their lives in hospital, 52 premature infants were discharged and then died at home and followed by 56 babies. ROP was found in 67 babies following 150 premature babies. Of all infants with a positive ROP, 27/67 were admitted to the hospital, while the first retinopathy was evident, and 40/67 were detected in the subsequent visits when discharged. While completing 82 baby follow-up interviews, 124 babies were still under control. In 14 of 67 ROP positive cases, type I disease was detected in 14 patients and type II disease was detected in 53 patients. 3 in Type I infants, stage 1, 5, stage 2 and 6 patients were in stage 3. Type I infants were given laser treatment and Avastin depending on the stage of the disease determined by the ophthalmologist shown on the table. All infants who received therapy had a satisfactory vision improvement. Two babies die from acute respiratory problems during follow-up.

TABLE 1: Preterm Patients Follow up (n=1500)

Expired in NICU	Coming for Follow up	Expired at Home	Final Follow up	Preterm Loss to Follow up
92	329	52	277	57

Fullterm=1079

Preterm= 421

TABLE 2: Final follow ups of ROP patients

Type	Numbers of pts
I	14
II	53
Stage I	03
Stage II	05
Stage III	06

Disease detection is an important treatment component of ROP. In the United States, criteria based "standard" investigation on a 32 weeks gestational age less than term and 1500 GMS birth weight than normal are used. 67% of babies <1250 g and 83% of babies <1,000 g, 9% results shown that babies are also suitable for treatment. These screening criteria however may not be acceptable to the low-income and middle class countries that have been shown to develop ROP^{5,6} in more mature and heavier babies. Gilbert and colleagues emphasized that if "standard" assessment criteria were applied in these countries, 13% of babies would be lost.

DISCUSSION

ROP is the leading cause of blindness in children around the world. In developed countries, two blind epidemics associated with ROP have been observed. In the years 1940-50, blindness due to ROP caused up to 50% of cases because of uncontrolled use of oxygen in premature babies. Subsequently, the use of controlled oxygen led to a reduction in blindness associated with ROP, but increased mortality and morbidity associated with pneumonia in these children. Increased survival of infants with better care, nutrition and infection control increased the incidence of ROP again. Every year, about 50,000 children worldwide are responsible for premature retinopathy (ROP) due to blindness. 15-35% of blindness in childhood is because of ROP in middle-income countries,. However, countries who are categorized in a middle-income such as Eastern Europe, Latin America, Pakistan India, and China and other Asian countries represent the population with the highest ROP blindness risk,

with 9 to 60 IMRs per 1,000 live births. The 1990s were defined as the outbreak of the third ROP Although improved neonatal care is noted, good treatment and screening options are not adequate in these areas. Infants are exposed to risk factors that are addressed in large-scale high-income countries, for example, in exposure to oxygen. There are no documented national data showing the incidence of ROP in Pakistan, but some published studies indicate retinopathy in premature infants at very high rates (32.5%). The incidence in our work is lower than the Ağa Han University Hospital in Karachi. The reason is the inclusion of premature babies of 35 weeks' gestation, since there are infants with 35 weeks of gestation. Many studies have suggested that if we use standard criteria, we can lose many cases in developing countries. Disease detection is major component for ROP treatment. In the United States, criteria based specific "standard" investigation on a gestational age < than 32 weeks and a birth weight < than 1.5 KG are used. The results show that 67% of babies <1250 g and 83% of babies <1,000 g, 9% are also suitable for treatment⁶. However, these screening criteria have shown that more mature and heavier babies develop ROP, which may not be true for low-income and middle income countries. The outcome of ROP towards a perfect and healthy view depends on timely diagnosis and appropriate treatment according to the disease stage. All infants with retinopathy do not need any local treatment; While type I infants need local treatment, type II is often self-limiting, but requires follow-up to monitor the progression of the disease. We follow this management regime

in this study. All ROP babies treated with laser and / or Avastin therapy are treated with normal morphology and physiology of the retina.

CONCLUSION

There is an urgent need to educate ophthalmologists to establish adequate detection and oxygen protocols, to establish close links between the NICU, the ophthalmologist and parents, and to provide all caregivers with training in the prevention of ROP in the protection of infants. premature in Pakistan due to permanent blindness.

RECOMMENDATIONS

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