Retinopathy of Prematurity Screening in University of Benin Teaching Hospital, Benin City

Valentina Winifred Okeigbemen[1] and Odarosa Uhumwangho[2]

[1]Paediatric Ophthalmology Unit, Department of Ophthalmology, University of Benin Teaching Hospital, Benin City.
[2]Vitreoretinal Unit, Department of Ophthalmology, University of Benin Teaching Hospital, Benin City.

***Corresponding author:** V W Okeigbemen,*

Email: valentina.okeigbemen@uniben.edu; Tel: +2348037124905

Introduction: Retinopathy of prematurity (ROP) is a disorder of the developing retinal blood vessels in preterm infants who have birth weight of 1500g or less or gestational age of 32 weeks or younger.[1] With better neonatal care, preterm babies are surviving at an earlier gestational age. Prolonged stay in neonatal care with sustained use of oxygen predisposes these babies to developing retinopathy. Other predisposing factors include anemia, multiple blood transfusions, septicaemia, multiple births, respiratory distress syndrome and apnoea. The aim of this study is to report on our experience screening preterm babies in the Special Care Baby Unit (SCBU) in University of Benin Teaching Hospital, Benin City, Nigeria.

Methods: This was a retrospective study conducted from October 2018 to June 2019. All babies who were 34 weeks gestation and below, 1.9kg and less or who had been on oxygen, with predisposing factors for retinopathy of prematurity were included in the study. The first screening was done 3-4 weeks post-delivery.

Results: Forty babies met the inclusion criteria and were screened. There were 18 males and 22 females giving a male: female ratio of 1: 1.2 with birth weight ranging from 410g to 1820g and gestational age from 26 weeks to 33 weeks. Eighteen babies (45%) had retinopathy of prematurity. Five of these babies (27.8%) had type 1 ROP requiring treatment while thirteen (72.2%) had type 2 ROP which required close follow up but was not severe enough for immediate treatment. One baby was treated and is alive. One died before treatment could be instituted. The remaining three

Figure 1: Examination of preterm by Pediatric Ophthalmologist

defaulted due to financial constraint. Of these three, one presented after 5 months with stage 5 retinopathy in both eyes. All the babies who had ROP had multiple risk factors.

Discussion: The proportion of babies detected with ROP in this study was 45%. This is similar to Adio's study in Port Harcourt and Onyango's study in Kenya.[2,3] This is in contrast to the Lagos study which had a prevalence of 15%.[4] Although the gestational age for Adio's study was less than 32 weeks compared to our study of less than 34 weeks, older babies between 32 and 34 weeks still presented with ROP, necessitating the screening of these children.

The lowest birth weight in our study was 410g (GA 28 weeks) and had type 1 ROP which was treated with anti-VEGF (Lucentis). This is low compared to the Ilorin study where minimum birth weight was 950g and Port Harcourt 900g.[2,5] This shows that preterm infants who have extremely low birth weight can survive indicating the improvement in our neonatal service.

Five of the babies with ROP (27.8%) had type 1 ROP which required treatment within 48 hours. This compares to the Kenya study of 20.9% but is higher than what obtained in Palestine[6] where severe type 1 ROP accounted for 11.3%, as well as in Lagos where treatable ROP accounted for 7.5% and Port Harcourt where threshold disease was 4%. This may be due to the duration of exposure to oxygen as these babies were younger with gestational age ranging from 27-30 weeks. All babies with ROP had multiple risk factors. This is similar to what was found in the Ilorin study. The presence of multiple risk factors could have predisposed these infants to developing ROP. Challenges encountered during screening included poor documentation, poor referral system between the ophthalmologists and neonatologists, financial constraint of parents which prevented treatment of patients and poor coordination of follow up visits. The solutions proffered to overcome these challenges included retraining of the assistant to properly document information, active involvement of the neonatologist and other members of the team in data collection and referral of patients to the eye clinic, education of the parents to create awareness of the need for follow up after discharge, education and encouragement of parents whose children needed treatment as well as liaising with records to develop follow up appointment schedule to incorporate the patients into the regular eye clinic.

Conclusion: The presence of a high prevalence of ROP brings to fore the need for early screening of preterm babies who have low birth weight or factors which could predispose them to retinopathy of prematurity. This is because such children are at a risk of severe loss of vision from this disease. The challenges encountered in screening these children can be overcome by improved documentation, better referral system, exploration of possible funding for treatment and coordination of follow up visits.

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