

Retinopathy of Prematurity Program in Ilorin, Nigeria 2019-2021: Changes, Outcome and Perspectives on Missed Screening Appointments

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Background: Retinopathy of Prematurity (ROP) screening services improved significantly in Nigeria between 2017 and 2020,¹ nevertheless, ROP blindness continues to be reported;² this has necessitated the need to continue to review possible factors that are responsible especially for missed ROP screening.³⁻⁶

The initial protocol (2007- August 2020) of the NICU in collaboration with the Ophthalmologist was that of NICU staff scheduling the babies for the ophthalmologist's evaluation using indirect ophthalmoscopy. Unfortunately, this was inconsistently done, with attendant missed ROP screening. Factors contributing to this include non-adherence to unit protocol due to the transfer of some NICU staff or miscommunication during shift duty transfer notes, early discharges of some of the babies.

In response to these challenges, the NICU and Ophthalmology teams adopted a different approach in 2020. A paid ROP coordinator was engaged. The coordinator worked 2 days a week and was charged with scheduling the babies and to make follow up telephone calls to remind caregivers on ROP screening appointments.

This communication compares the prevalence of missed ROP screening by babies nursed at the NICU of a large tertiary hospital in Nigeria in the period 2019-2020 and 2020-2021 and discusses important perspectives which are adaptable to other similar settings.

Methods: Comparative analysis of ROP screening at the NICU was done for 2 periods: August 2019 to 2020 when ROP screening was done using an indirect ophthalmoscope in the NICU with August 2020 -August 2021 when ROP screening was carried out at the eye clinic using a widefield camera. NICU Admission data were entered into a Microsoft Excel spread sheet, those eligible for ROP screening were extracted and scheduled for screening. Babies who died were noted. The screening criteria of the Nigeria ROP group were used: birthweight \leq 1500g or gestational age (GA) of \leq 34 weeks. The first screening was performed within 30 days of life or at discharge whichever was earlier. Babies with Type I ROP had Anti-VEGF and or LASER treatment. The payment was out of pocket for the family.

Results: In total, 1272 and 1207 children were admitted into the NICU in 2019-2020 and 2020-2021 respectively. Survival among babies eligible for ROP screening was about 71.5%. Overall, 190 (66.4%) and 239(76.6%) were eligible for screening during each period, while 68 (35.7%) and 90 (37.7%) of those eligible and alive had screening done. Most babies missed screening because they were no longer in the NICU on the Wednesday scheduled for screening, having been previously discharged. Any stage ROP was 30 (19.2%) 16 males and 14 females. Type I ROP was about 7% among babies screened (Table 1).

Conclusion: The widefield retina camera increased the number of babies screened and reduced the number who missed ROP screening. Nevertheless, more than 60% of eligible babies missed ROP screening. Having a NICU based ROP coordinator stationed to schedule ROP screening every day and a widefield camera to be used by someone in the NICU might ensure that every baby is examined before discharge and on follow up. This, if done in addition to having a day set aside for routine ROP screening by ophthalmologists, might significantly increase the number of babies screened for ROP and reduce the number of babies missing appointment.

Despite this, several children were saved from life-long blindness. Missed ROP appointment must be put in focus and evaluated as part of ROP programs and efforts directed towards eliminating the obstacles that prevent any eligible baby from having ROP screening.

Table 1: Characteristics of ROP screening without and with wide field camera compared for two similar one-year periods from 2019-2021

Parameters	Estimates of proportions	August 2019/2020 Frequency (%)	August 2020/2021 Frequency (%)
Total NICU Admission (A)		1272	1207
Number Eligible for ROP Screening (Birth weight \leq 1500g, Gestation Age \leq 34 weeks) (B)	(B/A) x 100	286(22.5%)	312(25.8%)
Number Eligible but Dead (C)		96	73
Number Alive- survival (and % of Eligible) (D)	(D/B) x 100	190(66.4%)	239(76.6%)
Number screened for ROP (% of alive and eligible) (E)	(E/D) x 100	68(35.7%)	90(37.7%)
Number Eligible, alive but missed Screening (F)	(F/D) x 100	122(64.3%)	149(62.3%)
Total number of babies develop ROP cases (of % Screened) (G)	(G/E) x 100	14 (20.6%)	16(17.7%)
Number of Type 1 ROP (H)	(H/E) x 100	5 (7.3%)	6 (6.6%)

NICU-Neonatal Intensive Care Unit

Keywords: ROP Screening, Missed ROP Appointment, Widefield Camera

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