



RETINOPATHY OF PREMATURE IN INFANTS WITH BIRTH WEIGHT 1500-2000GMS IN TERTIARY HEALTH CARE HOSPITAL, TELANGANA, INDIA

Ophthalmology

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ABSTRACT

Aim: The aim of the study is to assess ROP among infants with B.wt 1500-2000gms who are not within AAP/AOP screening guidelines.

Material and methods: Hospital based prospective interventional study on preterm infants screened for ROP at Neonatal ICU in Gandhi Hospital,secunderabad from January 2017 -march 2018 .Out of 399 screened for ROP,178(45%) are with B.wt 1500-2000gms and ROP is present in 157 (39%). it is statistically significant (P=0.0169).

Conclusion: In conclusion our study signifies the importance of modification in the screening guidelines in regard of the cutoff for B.wt which needs to be higher for the Indian population

KEYWORDS

Retiopathy of prematurity,Screening,B.wt 1500-2000gm,guidelines

INTRODUCTION

ROP is vasoproliferative progressive disorder seen in premature infants of low B.wt, leading to blindness and severe visual impairment and is avoidable.¹ As neonatal mortality decreases, ROP is no longer seen in the developed countries.^{2,3} The main risk factors for developing ROP in premature infants, are GA and BW.^{4,5} Other risk factors for ROP development including artificial ventilation, sepsis,necrotizing enterocolitis, postnatal glucocorticoids, and cardiopathy.^{6,7,8}

Screening guidelines American Academy of Pediatrics guidelines¹⁰

- Infants with B.wt of ≤ 1500 g.
- GA of 30 weeks or less.
- Infants with B.wt 1500-2000g or GA of >30 weeks with unstable clinical course.if supplemental oxygen was given.

Screening guideline for Indian scenario¹¹

- B.wt <1700 g
- GA at birth $<34-35$ weeks
- Exposed to oxygen >30 days
- Infants born at <28 weeks and weighing <1200 g are particularly at high risk of developing severe form of ROP.

There are geographic variation in the frequency of ROP in babies born at even similar GA.⁹

The purpose of this study is to suggest modification in the screening guidelines of ROP for indian population.As ROP is seen in larger,bigger BW babies in Asia and other developing countries.In India,outset of ROP has been seen in babies born with 2000g B.wt also.¹² Out of 26 million annual live births in India,approximately 2

million are <2000 g in weight and are at risk of developing ROP¹⁴ The incidence of ROP is increasing in India due to improved neonatal facilities.The disease course in ROP offers an opportunity for the physician to identify and treat the disease.¹³

METHOD

It is hospital based prospective interventional study.On preterm infants screened for ROP admitted in Neonatal ICU under National Rashtriya Baal Swastiya Karyakram in Gandhi hospital,Secunderabad.

Screening is done by a trained neonatologist and diagnosis of ROP done by ophthalmologist,after instillation of topical anaesthetic (proparacaine) and dilatation with tropicamide 0.5% drops,a wire speculum is placed and examination carried out using indirect ophthalmoscope,+20D lens,infantile speculum & neonatal scleral depressor.

399 cases were screened from JAN 17-MARCH 18

Inclusion criteria:

- Infants with B.wt 1500-2000gms and who underwent continuous supplemental oxygen therapy for >2 weeks.

Exclusion criteria:

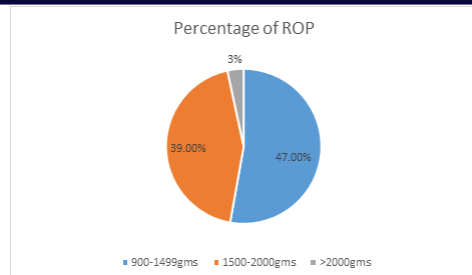
- Incomplete screening procedure

RESULTS

A total of 1133 preterm infants admitted in NICU from Jan 17-march 18,of them 399 infants were screened for ROP,among 358(89.7%) had ROP.Chi square analysis is used for analysis.

TABLE-1 Division accordingly

B.wt in grams	Total no. Of preterm babies admitted in NICU n=1133	Preterm babies screened for ROP n=399	No.of preterm male babies	No. Of preterm female babies	GA at birth <32 weeks	GA at birth >32 weeks	infants with ROP	infants without ROP
900-1499gms	406(36%)	199(50%)	n=199		n=199		n=199	
			98(49%)	101(51%)	96(48%)	103(52%)	189(95%)	10(5%)
1500-2000gms	427(37%)	178(45%)	n=178		n=178		n=178	
			91(51%)	87(49%)	71(40%)	107(60%)	157(88%)	21(12%)
>2000 gms	300(27%)	22(5%)	n=22		n=22		n=22	
			12(55%)	9(45%)	13(59%)	9(51%)	12(55%)	10(45%)



Out of total 399 babies, 178 are had B.wt 1500-2000gms of which 157(39%) cases are with ROP which is statistically significant ($P=0.0169$). 6 infants of B.wt <1499gms required laser photocoagulation. 1 infant with B.wt >1500g had laser photocoagulation.

DISCUSSION

Of 399 cases screened for ROP, 178(45%) are with B.wt 1500-2000g and ROP was present in 157(39%). Our aim is to assess the % of ROP in infants with B.wt 1500-2000g and for modification in guidelines as our study specifies that a statistically significant ($P=0.0169$) number to fall in this criteria.

There are studies which have suggested that screening criteria followed may not be suitable for various populations.^{2,3,5,15,16,17,18,19}

First author/Year of publishing	Screening criteria	Total screened	Incidence of ROP
Gopal L12/1995	B.wt <2000gm	50	38%
Sharma P20/2009	Gestation <=32w or B.wt <=1500gm. Infants with 33-34w gestation or 1501-1800gm.	704	11.9%
Crystal Le, Satish Agraharam/2016	B.wt 1500 - 1750 g.	2910	33%
Our study	B.wt 1500-2000g.	399	39%

Study In India, shows that the incidence of infants >1500g treated for threshold ROP with cryotherapy was 15.3%.²¹ ROP in babies with B.wt >1500g and with GA of >30 is prevalent in developing countries. modification of the current screening guidelines should be considered to include all babies at risk for ROP. 261 cases screened in their study 55(21.1%) B.wt >1500 g and 129(49.4%) had a GA >30 weeks. 47(18%) infants had both GA >30 weeks and BW >1500g. If not screened 17 patients would be missed and 5 would be untreated. Their recommendations included increasing the screening criteria to incorporate newborns with GA ≤ 34 weeks or BW ≤ 1750g regardless of any other diagnosis.²² In Lithuania, 54% of the infants needing treatment for ROP were >1500g at birth.²³

In south India, threshold ROP is seen in 2000g b.wt cases.¹² An article from Chandigarh highlighted significant % of severe ROP in babies b.wt > 1250gms at birth. prevalence of ROP in many other studies: 24% in India,²⁴ 29.2% in Singapore,²⁵ and 32.4% in Pakistan.²⁶ these studies involved only very low B.wt infants. A study in Beijing involved infants with higher GA and B.wt (up to 2 kg and/or 34 weeks GA) and shows a prevalence of 10.8%.²⁷

These studies are contrary from the studies in developed countries. A recent study from the US found that no infant with B.wt > 1500g developed treatable ROP.³⁰ 80% of infants with B.wt <1500 g born in the UK survive and stage 3 ROP of 8% to 10% has been reported. All babies with GA ≤ 31 wk or ≤ 1500g are screened in UK.²⁸

In our study we have noticed 39% of babies with B.wt 1500-2000gms had ROP which is a statistically significant ($P=0.0169$). This signifies that in our population, older and heavier babies are at risk for developing ROP, with or without the presence of associated risk factors and who cannot be presumed to have mature retina with out screening.

CONCLUSION

In conclusion our study signifies that it is important to include premature infants with B.wt 1500-2000gms in guidelines which is significant ($P=0.0169$) in regard of the cutoff for B.wt which needs to be higher for the indian population to improve the % of babies that

are screened and treated on time to prevent ROP. Since ROP causes blindness, all efforts must be made to improve screening programmes and prevent the development of ROP.

Conflict of interest none, no financial funding.

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