

# Screening for Retinopathy of Prematurity

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**Abstract:** This study was carried out in 530 neonates to decide incidence of ROP and to determine association of weight and gestational age and incidence of ROP and to find out risk factors for ROP.

**Keywords:** ROP, Gestational age, O<sub>2</sub> supplementation, sepsis, VLBW

## 1. Introduction

Retinopathy of prematurity (ROP) (Terry syndrome) is a vasoproliferative retinopathy which affects developing retinal vasculature of premature babies.<sup>(1)</sup> Retinopathy of prematurity (ROP) is a retinal disorder peculiar to premature infants potentially leading to blindness and severe visual impairment.<sup>(2)</sup> It is an important cause of childhood blindness all over the world. In India, with improved survival of very low birth weight (VLBW) infants, ROP is emerging as a significant problem even in developing countries like India. The development of neonatal intensive care units, preterm neonates with extremely low birth weights are surviving and are at an increased risk of developing ROP<sup>(3)</sup>. Providing these neonates with an intact survival is more important than merely reducing the mortality. The overall incidence of ROP in India is 0.1 per 1000 live birth. In developed countries the incidence of ROP is 90% among <750 gm, 78.2% among 750-999 gm and 46.9% among 1000-1250 gm babies.

## 2. Materials and Methods

To make this prospective observational study, 530 newborns (intramural+ extramural) are screened for ROP who were admitted in NICU of civil hospital, Ahmedabad, Gujarat during the period of September 2014 to March 2015.

### Inclusion Criteria

- Birth weight <1.5 kgs.
- Gestational age at birth  $\leq$  32 weeks.
- Birth weight 1.5-2 kg or age >32 wks of gestational age ; if risk factors are present.
  - Respiratory distress syndrome.
  - Sepsis.
  - Multiple blood transfusions.
  - Apneic episodes.
  - Intra ventricular hemorrhage.
  - Prolonged oxygen therapy.

Those whose gestational age is beyond 28 weeks first screening was done at 3-4 weeks of postnatal age and those whose gestational age is less than 28 weeks or weighing less than 1200 grams are screened first at 31<sup>st</sup> week of gestational age.

## 3. Observation and Results

**Table 1:** Overall Incidence

Total Neonates	Neonates With ROP	Incidence
530	87	16.4%

**Table 2:** Gestational age and ROP staging

ROP	No. of Patients Positive For ROP			Total no of pt (n=87)
	<28 WKS (n=28)	28-32 WKS (n=51)	>32 WKS (n=8)	
Stage 1	18	46	7	71
Stage 2	7	4	1	12
Stage 3	3	1	0	4
Stage 4	0	0	0	0
Stage 5	0	0	0	0

**Table 3:** Birth Weight and ROP

Weight	Total Patients	ROP Positive	Percentage
<1.5 KG	280	77	27%
1.5-2KG	150	10	6.60%

**Table 4:** Neonatal Risk Factors and ROP

Neonatal Risk Factors	Frequency (n=530)	ROP Positive Neonates
Prematurity	466 (88%)	77 (16.5%)
Oxygen Supplementation	344 (65%)	79 (22.9%)
RDS	180 (34%)	40(22%)
Intraventricular Hemorrhage	37 (7%)	4(11.6%)
Apneic Spells	22 (42%)	16(7.2%)
Sepsis	84 (16%)	13(15.4%)

**Table 5:** O<sub>2</sub> supplementation and ROP

	Patients developed ROP	Patients not developed ROP	Total
O <sub>2</sub> given	79	288	367
O <sub>2</sub> not given	8	155	163
Total	87	443	530

## 4. Discussion

My study includes 530 neonates with incidence of 16.4% of ROP. Incidence among male is 13.5 % which lower as compared to incidence among female babies which is 26.5% with sex ratio of 0.57. Incidence of ROP is higher in babies

with less than 28 weeks (37%) and between 28 to 32 weeks (29%) of gestational age as compared to incidence among babies with more than 32 weeks of gestational age. Maximum patients were diagnosed in stage 1(71) while none of them were diagnosed as having stage 5 ROP. Apart from gestational age, birth weight less than 1500 grams is one of the main risk factor as having high incidence of 27%. Oxygen supplementation stands first as a major risk factor with incidence of 22.9% followed by RDS (22%) and prematurity (16.5%). Relative risk of oxygen supplementation is 4.38.

## 5. Conclusion

Incidence increases with decreasing gestational age. Incidence is more common in neonates < 1.5 kg. Oxygen administration was found to have positive correlation. Other risk factors that should be considered are RDS, apneic spells, sepsis, intraventricular hemorrhage.

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