A STUDY ON RETINOPATHY OF PREMATURITY BY REVIEW OF RISK FACTORS THROUGH SCREENING IN TERTIARY EYE CARE HOSPITAL

CODE – 1012108

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FINANCIAL DISCLOSURE
NO CONFLICT OF INTEREST

INTRODUCTION

Retinopathy of prematurity (ROP) is a vasoproliferative disease that affects premature infants. ROP is on a rise in India as a result of the improved neonatal care and better neonatal survival rate. Identifying and screening of at-risk premature infants performed by an experienced ophthalmologist remains the most important strategy in the management of ROP.

It is characterized by initial hyperoxic state with cessation of growth of existing retinal vessels followed by pathological hypoxia induced outgrowth of new vessels.

Low birth weight (< /=1500g), prematurity(</= 32 weeks) are the most important risk factors

Several maternal and fetal risk factors can lead to Retinopathy of prematurity.

Maternal risk factors: multiple gestation,premature rupture of membranes,pre eclampsia,eclampsia,gestational diabetes,placenta previa,antenatal infections and antenatal steroid injections.

Fetal risk factors: prematurity,low birth weight,oxygen supplementation,blood transfusion,sepsis,necrotizing enterocolitis(NEC),Hypoxic ischemic encephalopathy(HIE),respiratory distress syndrome(RDS),hyperbilirubinemia,intraventricular hemorrhage.

AIM OF THE STUDY:

To identify several maternal and fetal risk factors associated with retinopathy of prematurity by screening in a tertiary eye care hospital.

OBJECTIVES:

1.To identify various maternal and fetal risk factors for Retinopathy of prematurity

2.To categorize the premature babies according to severity of disease and associated risk factors.

MATERIALS AND METHODS: A cross sectional study of 50 infants who were screened according to Indian guidelines(gestational age </=34 weeks, birth weight <= 2000 grams) done between may 2021 to august 2021.

Examination was done by a single ophthalmologist specialized to screen the babies

It was done 4 weeks after the birth and Detailed history included the birth weight, gestational age, the postnatal problems,obstetric history were obtained.

Pupillary dilatation was done with a mixture of 2.5% phenylephrine and 1% tropicamide .0.5 % proparacaine is used for topical anesthesia.

An infantile lid speculum was used to separate the lids. Fundus was examined with binocular indirect ophthalmoscope and +20D condensing lens.

INCLUSION CRITERIA: All the babies with gestational age less than or equal to 34 weeks and birth weight less than or equal to 2000 grams.

EXCLUSION CRITERIA: All the babies with gestational age more than 34 weeks and birth weight more than 2000 grams.

RESULTS: Out of 50 babies, males: 30 , females : 20.

Babies with ROP : 18 (36%)

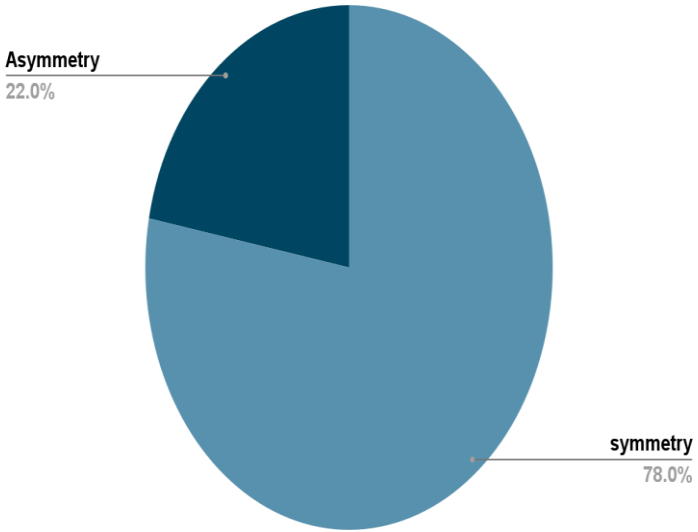
Babies without ROP : 32 (64%).

ROP babies with symmetrical disease : 14 (78%)

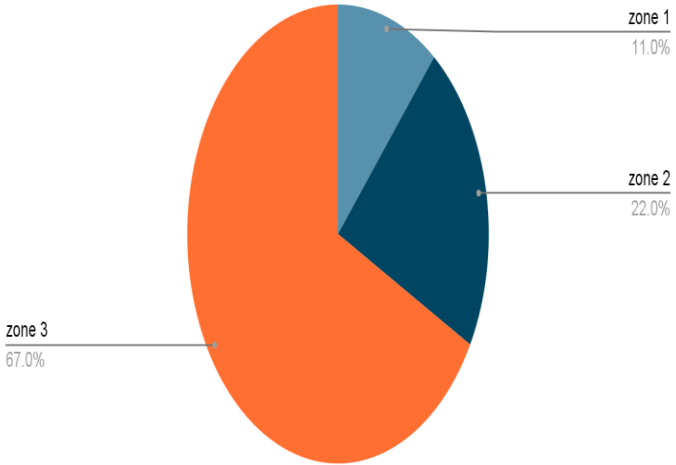
ROP babies with asymmetrical disease : 4 (22%)

ZONES OF ROP	ZONE 1	ZONE2	ZONE 3
Number and %	2(11%)	4(22%)	12(67%)

SYMMETRY



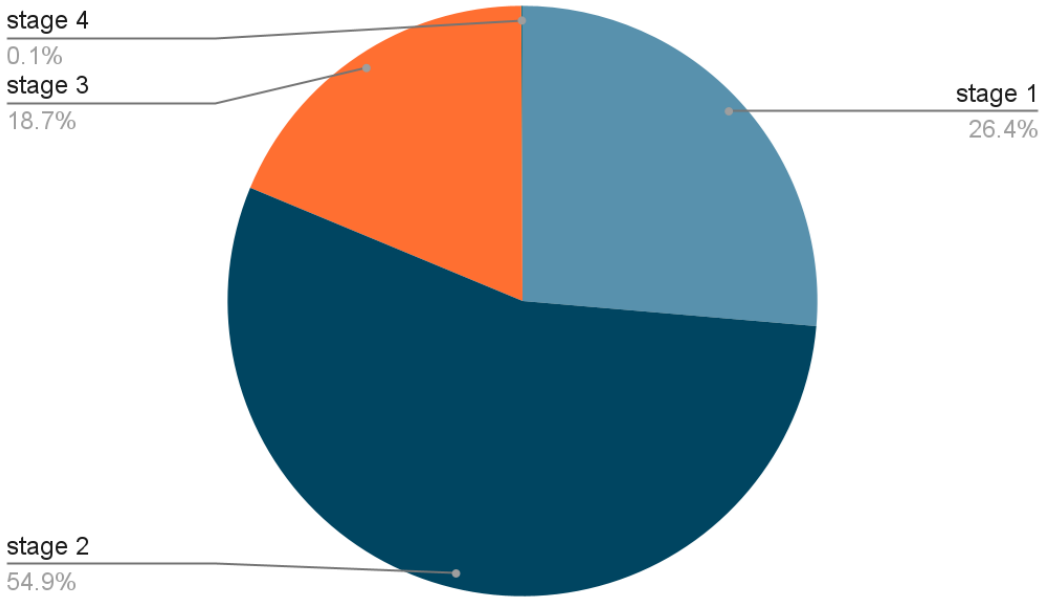
ZONES OF ROP



STAGE OF ROP	1	2	3	4	5
NUMBER & %	5(28%)	9(50%)	3(17%)	1(0.06%)	0

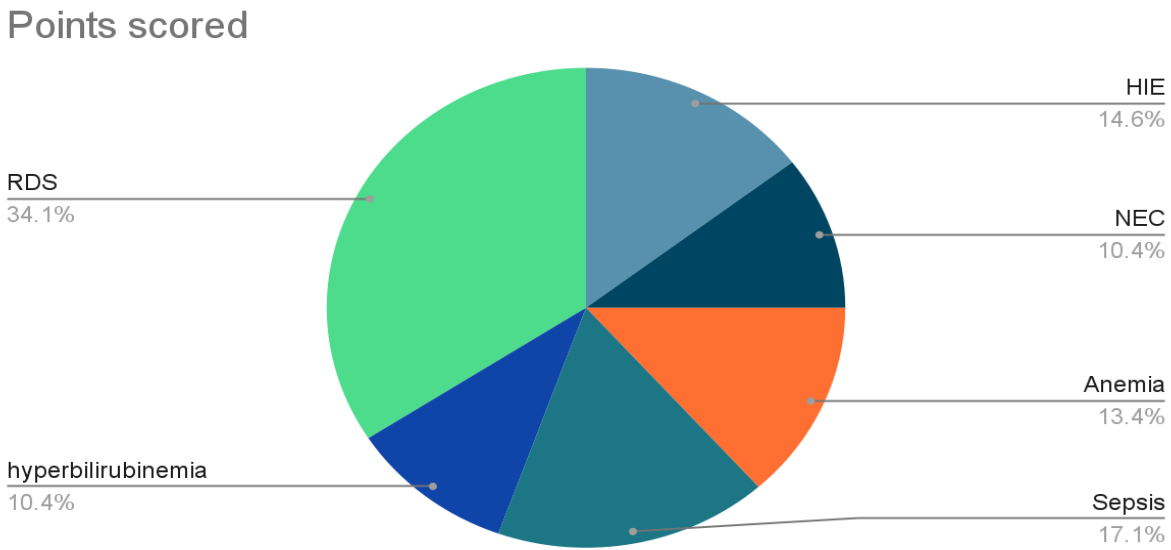
HISTORY	BLOOD TRANSFUSION	OXYGEN ADMINISTRATION
TOTAL BABIES(50)	5(10%)	25(50%)
ROP(18)	4(22%)	14(78%)

STAGES OF ROP



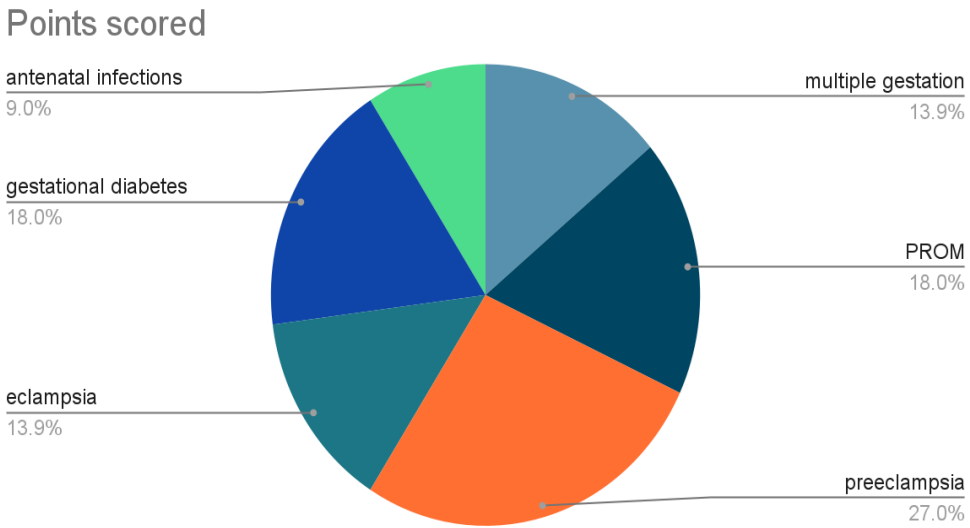
FETAL RISK FACTORS:	Number and %
1.Hypoxic ischemic encephalopathy(HIE)	4 (22%)
2.Necrotizing enterocolitis (NEC)	3 (17%)
3.Anemia	4 (22%)
4.Sepsis	5(28%)
5.Hyperbilirubinemia	3 (17%)
6.Respiratory distress syndrome (RDS)	10(56%)

FETAL RISK FACTORS

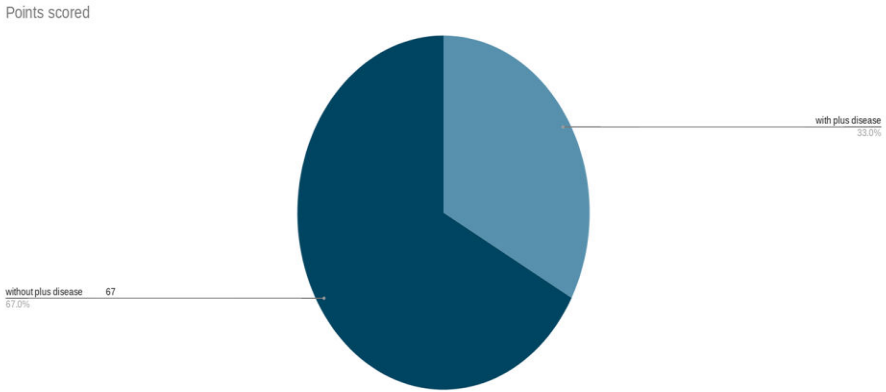


MATERNAL RISK FACTORS:	number and %
1.Multiple gestation	3(17%)
2.Premature rupture of membranes	4(22%)
3.Pre eclampsia	6(33%)
4.Eclampsia	3(17%)
5.Gestational diabetes	4(22%)
6.Antenatal infections	2(11%)

MATERNAL RISK FACTORS



Babies with plus disease 6(33%) without plus disease: 12 (67%)



DISCUSSION

With improving scientific advances and technological understanding the incidence of Retinopathy of prematurity is rapidly rising.

The constant urge to make premature babies survive with oxygen administration and blood transfusions has lead to increase ROP cases

Prematurity and low birth weight are the most common and important risk factors.

Of the total 50 babies screened 18 babies(36%) have ROP.

Andre Moraes Freitas et al studied 602 newborn babies and found incidence to be 33.9%.

Lingam Gopal et al studied 50 babies and incidence was found to be 38% and symmetrical disease was found to be 72%.

Most of the babies had symmetrical disease (78%) and zone 3 is most commonly involved(67%).

Stage 2 disease seemed to be highest with 50% of cases.

Apart from prematurity and low birth weight, respiratory distress syndrome with oxygen supplementation was common association(56%).

Various maternal risk factors were found to be common associations like pre eclampsia(33%) and gestational diabetes (22%).

CONCLUSION: Retinopathy of prematurity is associated with several maternal and fetal risk factors.

Early detection by screening of the premature babies can prevent blinding complications.

As the Zone 1 is rarely involved this disease carries a favourable outcome.

Inadvertent and generous oxygen administration must be stopped due to its high association with ROP.

All the premature babies must be screened 4 weeks after gestation for the earliest detection of the disease with an ophthalmologist specialized in that field with regular follow ups and prompt intervention as soon as the disease is identified.

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