Retinopathy of prematurity screening in Sanglah Central Public Hospital in January 2009 - December 2010

Semara Budiyasa, I Wayan Karya, I.B Putra Manuaba, A.A Mas Putrawati Triningrat, Ariestanti T. Handayani

ABSTRACT

**Background:** Retinopathy of Prematurity (ROP) is a proliferative retinopathy which affected premature babies and could cause blindness.

**Objective:** The aim of this study was to describe characteristics of babies which have been screened for ROP in Sanglah Hospital during the period of 1st January 2009 until 31th December 2010.

**Method:** A descriptive retrospective study has been done by data reviewed from medical records of 37 babies who have screened for ROP in Sanglah Hospital from 1st January 2009 to 31st December 2010. Date of birth, gestational age, age when screening conducted, date of examination, birth weight, frequency of examination, diagnosis and the final result were gathered from medical records. This study used SPSS 16.0 program to analyses the frequency and percentages of the data.

**Results:** There were 37 babies (25.3%) screened for ROP from babies who born prematurely in Sanglah Hospital during period of 1st January 2009 until 31st December 2010. From the numbers, 43.2% of the babies have gestational age less than 34 weeks. Average of birth weight was 1648 gram (range: 800 - 2500 g, SD 358.9 g). About 43.2% of the babies were first screened in age less than 4 weeks, but all the babies have examined less than 5 times during the examination periods. ROP was present in 10.8% of the babies and 2.7% with Plus disease. Most of the babies (81.1%) had retinal vascular zone.

**Conclusion:** Incidence of ROP was 10.8% and Plus disease was 2.7%.

**Keywords:** Retinopathy of prematurity, screening, premature babies


INTRODUCTION

Retinopathy of prematurity (ROP) is a disease affecting premature and low birth weight infants, in which the retinal blood vessels fail to develop properly. This may result in rapidly progressive structural eye malformation that causes blindness.1,2 ROP is rare in infants with a birth weight greater than 2000 g. Premature infants weighing less than 1500 g at birth are at risk for serious visual sequelae from ROP, and the risk increases as gestational age and birth weight decrease.3 On the basis of these findings, a joint statement by the American Academy of Pediatrics, American Academy of Ophthalmology, and American Association for Pediatric Ophthalmology and Strabismus recommends ROP screening by an experienced ophthalmologist for all infants with birth weight <1500 g or with gestational age <28 weeks, as well as for selected infants between 1500 and 2000 g birth weight who are believed to be at high-risk by their attending neonatologist.4 Goal for this screening is to identify ROP among babies with risk factors as soon as possible in order to prevent progressivity and further complication caused by disease.1,2

**Patients and Method**

The study was conducted by medical record data review of babies who have been through ROP screening in Sanglah General Hospital from January 2009 until December 2010. Data collected including date of birth, gestational age, age of babies when screened, date of screening has done, birth weight, frequency of examination, diagnosis, last result of screening. This study used SPSS 16.0 program to analyses the frequency and percentages of the data.

**Result**

There were 146 premature babies recorded in Sanglah Central Public Hospital from January 2009 until December 2010. Screening for ROP has done for 37 babies, and 4 babies were diagnosed with ROP.

Mean birth weight was 1648 grams (range: 800 - 2500 grams, SD 358.9 grams). Babies with ROP have birth weight under 2000 grams with gestational age less than 34 weeks. Three babies were suffered ROP.
stage 1 and have spontaneous regression, but one baby suffered ROP stage 2 was referred.

Gestational age of babies who had screened were between 27 until 42 weeks. Twenty premature babies were born in age less than 34 weeks, including 4 babies who suffered ROP. Retinal examination for all babies was less than 5 times and 43.2% had their first retinal examination within less than 4 weeks after birth.

DISCUSSION

A number of infants affected ROP are larger in developing countries and older gestational age than infants in the United States who develop ROP, suggesting that screening criteria for ROP should be modified in developing countries. Subhadra et al (2006) states that screening criteria for ROP with birth weight less than 1750 g and gestational age less than 34 weeks are more appropriate for developing country. ROP screening in Sanglah General Hospital based on modified criteria for developing country which gestational age less than 34 weeks, but screening also conducted for infants with gestational age more than 34 weeks with high-risk for ROP.

The interval of ROP incidence among countries are different between 10% - 46%. Incidence of ROP in Sanglah Central Public hospital was 10.8%. This number may be less than factual number since there were babies could not been screened due to under intensive care or forced to go home by family. Coverage for ROP screening in Sanglah hospital was 25.3% of premature babies and low birth weight infants. Limitation in identification for high-risk babies, referral system, diagnostic equipment and human resources may contribute for those small number.

Screening for ROP should be performed at least 4 weeks after birth. In Sanglah Central Public Hospital there were 43.2% babies got screened before time reach 4 weeks after birth. Early referral from pediatric department or gestational age have reached 34 weeks at time of examination could be the cause but needed further investigation.

Treatment guidelines have been created based on the results of several multicenter ROP trials. These guidelines indicate which level of disease requires treatment (cryotherapy or laser, or observation) to prevent adverse visual sequelae. In Sanglah Central Public Hospital, there were 3 babies with ROP stage 1 and in time of observation they had spontaneous regression. A baby with Plus disease had referred. Observation still becomes main treatment in Sanglah Central Public Hospital since there are lack of equipment to perform laser or cryotherapy.

REFERENCES