

**Abstract Title:** Low Weight Gain at 6<sup>th</sup> Week of Life as a Risk Factor for Retinopathy of Prematurity

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**Keywords:** 696 retinopathy of prematurity, 678 retina.

**Abstract Body:** **Purpose:** Described at first time over 50 years ago, Retinopathy of Prematurity (ROP) became a leading cause of childhood blindness in developed countries due to the greater survival of preterm infants with very low birth weight or gestational age. The objectives of this study are to evaluate the low weight gain (defined as a gain of weight from birth to the 6<sup>th</sup> week of life less than half of the birth weight) as a risk factor for the development of ROP, at any stage, in very low birth weight infants born at the Neonatal Intensive Care Unit of the *Hospital de Clínicas de Porto Alegre*, in southern Brazil, and to determine if the study factor is independently associated with the disease, since ROP is a multifactorial disease.

**Methods:** A prospective cohort evaluating the incidence of ROP and the weight gain in the first 6<sup>th</sup> weeks of life was done. The clinical outcome was the development of ROP at any stage. The main variable was the gain of weight from birth to the 6<sup>th</sup> week of life less than 50% of the birth weight. All infants born from September 2002 to May 2006 with birth weight  $\leq$  1500 g or gestational age  $\leq$  32 weeks were included. All statistical analysis were done with the Statistical Package for Social Sciences (SPSS, version 13.0) programme. Comparison between variables were done using the chi-square test, and logistic regression was used to evaluate the low weight gain as an independent risk factor for ROP, considering also birth weight, gestational age, use of surfactant, need for blood transfusion and development of sepsis. To classify the disease, the 1984/1987 International Classification of Retinopathy of Prematurity was used.

**Results:** 115 infants were included in Group 1 and 160 in Group 2. The incidence of ROP in

Group 1 was 39.1% and in Group 2 was 15.6%. The comparison between the two groups demonstrated a strong correlation (Chi-square=19.48,  $p < 0.0001$ ), relative risk of 2.50 (CI95% =1.64-3.84) and odds ratio equal to 3.47 (CI95%=1.97-6.12). This represents a high risk for the variable in study participate in the development of ROP. After logistic regression, low weight gain showed high correlation with ROP, independently of another important risk factors. The study statistical power was 98.9%.

**Conclusions:** The gain of weight from birth to the 6<sup>th</sup> week of life less than 50% of the birth weight in very low birth weight infants is an important risk factor for ROP development, at any stage. Ophthalmologists and neonatologists should take special attention in the screening of retinopathy of prematurity in this special group of patients.

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