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STRUCTURAL AND FUNCTIONAL OPHTHALMOLOGICAL FOLLOW-UP OF A PRETERM POPULATION: REPORT AT SIX YEARS OF AGE

Oral

Lepore D., Giannuzzi F.*, Orazi L., Amorelli G., Hu L., Barresi C., Caproli B., Gallini F., Ricci D., Petrianni M., Amore F., Vento G.

Università Cattolica del Sacro Cuore ~ Rome ~ Italy

Purpose:

The aim of the study was to analyse structural and functional ophthalmological outcomes at six years of age in a population of children born with ≤ 32 weeks of gestational age (GA) and/or ≤ 1000 grams of birth weight (BW) at the A. Gemelli University Hospital in Rome.

Methods:

Per protocol, all preterm babies screened for acute ROP undergo at six year of age a full ophthalmologic examination. Neurodevelopmental aspects were assessed By means of the Wechsler Intelligence Scale for Children (WISC). Recently wide-field fundus retinography and oral ultra widefield fluorescein angiography (OPTOS Inc USA) and OCT and OCT-A (Carl Zeiss, D) imaging were introduced in the protocol. Peripheral retinal vascular features highlighted by UWFFA. Peripheral avascular retina (PAR) was also observed and classified form 1 to 3 based on its extent. Foveal Avascular Zone (FAZ) was observed with both OCT-A and UWFFA and correlated with visual acuity (VA).

Results:

45 preterm infants examined at a mean age of 6 years and 5 months. 72 eyes were previously diagnosed by various ROP stages. ETDRS LogMar visual acuity ranged from 2 to 0. Peripheral retinal vasculature showed at WFFA a dichotomous pattern in 67% (n=55, shunting pattern in 21% (n=17) and finger-like pattern in 12% (n=10). One eye only showed a light leakage at the junction between vascular and avascular retina. PAR was present in 63% (n=29). FAZ was absent on 28,5% (n=24) of the OCTA images with a good accordance with WFFA images. No significant correlation was found with VA.

Conclusions:

Dichotomous branching pattern and PAR are common peripheral vascular features in our population. These findings suggest the importance of a long term follow up in preterm children, especially those with specific peripheral vascular retinal features.