RELATIONSHIP BETWEEN MATERNAL ETHNICITY, GESTATION AGE, BIRTH WEIGHT AND EARLY WEIGHT GAIN AND DEVELOPMENT OF RETINOPATHY OF PREMATURITY REQUIRING TREATMENT IN A MULTIRACIAL POPULATION

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Background: The unreleased algorithm (WINROP) uses gestation age (GA), birth weight (BW) and early weight gain (EWG; absolute weekly weight gain in the first 6 weeks) to predict development of ROP requiring treatment (ROP-T). In predominantly white infants, it is reported to predict ROP-T with 100% sensitivity and 80% specificity (1,2).

Aim: To explore the relationship between maternal ethnicity (ME), GA, BW and EWG and ROP-T in a multiracial population.

Methods: A retrospective record review of babies screened for ROP at two tertiary neonatal units serving multiracial populations in North East London. Analysis was performed using unpaired t-test and logistic regression

Results: Mean ($\pm$ SD) GA, BW, and EWG were significantly lower in ROP-T babies compared with those who did not require ROP treatment (ROP-C) (Table).

Group	n	GA(weeks)	Birthweight (g)	Early weight gain (g/week)
ROP-C	560	28.6 $\pm$ 2.6	1135 $\pm$ 318	104 $\pm$ 43
ROP-T	57	24.6 $\pm$ 1.1*	700 $\pm$ 110*	82 $\pm$ 37*

[Table]

On logistic regression, GA ($p < 0.001$), BW ($p < 0.001$) and ME ($p = 0.01$) were significant predictors for development of ROP-T, whereas EWG was not. An increase of 1 week GA, 100 grams of birthweight and being born to black mother resulted in reduction of odds of development of ROP-T from 1 to 0.49, 0.53 and 0.15 respectively.

Conclusions: In our multiracial population, GA, BW and non-black ME were significant predictors for the development of ROP-T but early weight gain was not.

References:

- (1) Hellström et al. Pediatrics 2009
- (2) Wu et al. Arch Ophthalmol 2010