[3776.9] Clinical Conditions Associated with Post Natal Growth Failure in Preterm Infants

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BACKGROUND: Among our preterm newborn infants, at 40 weeks post menstrual age (PMA) 52 % are below the 10th percentile for body weight, 47% for body length and 8% for head circumference (HC).
OBJECTIVE: to evaluate the influence of each perinatal clinical condition on the frequency of post natal growth retardation (PNGR), low head circumference (HC) and short body length at 40 PMA.
DESIGN/METHODS: cohort study. Inclusion criteria: in-born infants, <32 weeks GA, birth weight <1500 g and surviving up to 40 weeks of PMA. Exclusion criteria: major congenital malformations, intrauterine infections and infants transferred before 40 weeks. Three explicative logistical regression models were constructed estimating in each case the 95% confidence intervals for the odds ratio of the significant factors.
RESULTS: From 08/2001 to 11/2005, 339 infants were born, 238 met the inclusion criteria and were studied. Clinical characteristics and outcomes were: mean birth weight: 1144 g, SD 234; mean GA: 28.4 weeks, SD 1.66; frequency of small for dates: 9.2%; CRIB score >5:11.3%; PNGR: 52%; low HC at 40 PMA: 8%; short length at 40 PMA: 47%; BPD: 36.6%; late onset sepsis: 26.9%; NEC: 1.7%; PDA: 46.6% and combined morbidity (PDA, RDS,BPD and late onset Sepsis): 60.1%. Multivariate analysis showed that the following variables were predictive for PNGF: gestacional age (OR:2.01, 95%CI 1.52-2.66), combined morbidity (OR:2.85, 95%CI 1.43-5.69), birth weight (OR:0.53, 95%CI 0.43-0.66) and caloric deficit (OR:1.13, 95%CI 1.04-1.23). Predictive variables for short length were: gestacional age (OR:1.58, 95%CI 1.22-2.03), combined morbidity (OR:3.09, 95%CI 1.6-5.96), birth weight (OR: 0.54 95%CI 0.44 0.66) and male gender (OR:2.39, 95%CI 1.26-4.54). Predictive variables for low HC were: birth weight (OR:0.62, 95%CI 0.54-0.83) and male gender (OR:6.39, 95%CI 1.76-23.23). All of the above have good Hosmer-Lemeshow adjustment and show good capacity of classification (above 72%).
CONCLUSIONS: We found that combined morbidities such us RDS, PDA, late onset sepsis and BPD, associated with lower birth weight, gestacional age, male gender and caloric deficit explain PNGR , shorter body length and lower head circumference at 40 PMA weeks in our population. Postnatal growth failure prevention will only be possible improving nutritional interventions and reducing neonatal co-morbidities.
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