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### SEROPREVALANCE OF BORDETELLA PERTUSSIS ANTIBODIES AMONG HEALTHY ADOLESCENT GIRLS IN EDIRNE

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**Objective:** Immune response against pertussis can be induced by infection and/or vaccination and vaccine induced immunity is known to wane within the following decade. Our aim was to assess the pertussis immune response among adolescent girls in Edirne province in Turkey and to determine its relationship with some parameters.

**Material and Method:** The serum sample collection, representing 12 to 17 years old adolescent girls was consisted of 359 subjects and was selected from school lists by systematic and random sampling which weighted by age, urban-rural residence strata proportional to the corresponding distributions in Edirne population. Pertussis immunity was determined by in-house ELISA method and anti-PT and anti-FHA antibody titers were measured quantitatively.

**Results:** The overall ratio of having protective levels of antibody (>10 EU/ml) were 95.3% and 97.2% for anti-pertussis toxin and anti-filamentous hemagglutinin, respectively. The ratio of antibody in protective levels for anti-pertussis toxin and anti-filamentous hemagglutinin in 12 and 14 years age group were found as 94.1%; 97.0%; in 15 and 17 years age group 97.5% and 97.5%; in rural area 96.7%; 97.5%, in urban area 94.5%, 97.5%, respectively (p>0.05).

**Conclusion:** The high ratio of having protective levels of antibodies might be an indicator of the previous infections that is a threat for infants who have not completed primary immunization. In this respect, adult immunization should be discussed.

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### BRAIN DAMAGE OF EXTREMELY LOW BIRTH WEIGHT INFANTS WITH HISTOPATHOLOGIC CHORIOAMNIONITIS

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**Background/aims:** Neonatal cerebral white matter injury is the major precursor for neurological impairment and cerebral palsy. Chorioamnionitis has been associated with periventricular leukomalacia (PVL) in very low birth weight (VLBW) infants. We evaluated the association between occurrence and pathological severity of histological chorioamnionitis (HCA) and brain damage in VLBW infants.

**Methods:** A prospective histological study on 287 placentas was performed in preterm infants (<32+6 weeks gestation), consecutively admitted to III level NICU of Padua University from January 1999 to December 2004. Development of intraventricular hemorrhage (IVH) or PVL was related to the evidence of HCA and to chorioamnion inflammatory scores, according to Naeye et al.

**Results:** Among the 287 NICU admitted preterm infants, 68 (23.6%) showed HCA, and 39/287 (13.5%) had brain damage, IVH or PVL. Brain damage was present in 15/68 (22%) of infants in the setting of HCA and in 24/219 (10.9%) of infants in the absence of HCA (p<0.05). HCA is also associated with a significantly increased frequency of PVL (5.8% vs 0.4%; p<0.01), but failed to reveal any association with IVH (16.1% vs 10.5%; p=0.2). However, severe fetal HCA, stage II-III vs I and grade II-III vs I, were unrelated to brain damage. HCA infants were comparable to non-HCA infants in all selected demographics and clinical variables, except for increased vaginal delivery and lower gestational age (27±2.5 vs 30±2.3; p<0.05).

**Conclusions:** HCA in preterm infants <32 weeks gestation is significantly associated with PVL occurrence, unrelated to fetal sites and severity of chorioamnion inflammation, but fails to induce any effect on IVH occurrence.

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### FACTORS ASSOCIATED WITH RECOVERY OF GROWTH IN EXTREMELY LOW BIRTH WEIGHT INFANTS

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**AIMS:** To examine the growth pattern through the first 36 months of life in infants born extremely low birth weight (ELBW) and to investigate whether any relationship exists between growth, neonatal characteristics and neurodevelopment outcome at 36 months of chronological age (c.a.).

**METHODS:** One hundred forty-five ELBW infants (mean (SD) gestational age 27.9 (1.9) weeks, birth weight 841 (123) g), consecutively born 1996–2001, without congenital or chromosomal diseases, were evaluated by standardized growth z scores, calculated by the EUROGROWTH software version 2000, through the first 36 months of life. The Griffiths Mental Development Scale (DS) was administered at 36 months of c.a. Statistical analysis was based on ANOVA for repeated measures and multiple linear regression.

**RESULTS:** Mean (range) weight (W), length (L) and head circumference (HC) at birth were, respectively, 841 (520–1000) g, 34 (26–40) cm, and 25 (20–30) cm. Mean (SD) W, L, and HC z scores recovered through the first 36 months of life (P<0.0001) ranging, respectively, from -2.62 (1.67) at 3 months to -1.85 (1.32) at 36 months (P<0.0001), -2.67 (1.48) to -1.04 (1.13) (P<0.0001), and -1.62 (1.37) to -1.56 (1.06) (P=0.080). At 36 months of c.a. respectively 38%, 17%, 34% of infants had W, L, HC z score <-2. At stepwise multiple regression analysis only birth weight was independently associated with z score for W (adjusted r=0.48, P<0.01), for L (adjusted r=0.41, P<0.01), for HC (adjusted r=0.39, P<0.05). Neonatal characteristics (gender, birth weight, length and head circumference, being SGA, gestational age, ventilation) and DS at 36 months entered the model as confounders.

**CONCLUSIONS:** Through the first 36 months of life ELBW infants show progressive recovery of growth, although growth impairment is still present. More unfavourable neonatal anthropometrics appear to be a major factor associated with lower recovery at 36 months.

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### DO EATING HABITS HAVE AN EFFECT ON OBESITY AMONG GREEK ADOLESCENTS?

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**Introduction:** It has been shown that there is a high prevalence of overweight and obese children at 7 and 18 years in Greece, but there is limited information from the literature regarding their eating habits.

**Aim:** To identify a possible association of eating habits among adolescents with their body mass index (BMI) at 18 years. Population and method: Individuals were 3415 adolescents born in April 1983, who responded to pre-coded questionnaires sent out through the high schools of the country. The self-reported data was examined using multiple linear regression analysis with BMI as the dependent variable. Independent variables were breakfast meals, devouring large amounts of food, stress-related eating, participation in family meals, consumption of home-delivery food, eating elsewhere- not at home and gender.

**Results:** Adolescents that have breakfast daily (p<0.001) or 1–3 times a week (p=0.008) have lower BMI. Youngsters who often eat elsewhere, not at home, also have a lower BMI (p=0.001). In contrast, devouring large amounts of food (p<0.001) and stress-related eating (p<0.001) are significant risk factors for higher BMI. Differences appeared when stratified by gender. BMI for girls rises when devouring large amounts of food (p=0.003), whereas this was non-statistically significant for boys. BMI for boys decreases when they often order home-delivery food (p=0.04), which was found to be non-statistically significant for girls.

**Conclusions:** Greek families need to realize the contribution of breakfast to body shape, as it is one of the most important meals of the day. Obesity prevention programs ought to establish healthy eating habits from an early age. Alternative methods to deal with stress, rather than eating, need to be promoted.

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### SERUM LEVELS OF IL-6, IL-8 AND IL-10 IN PREMATURE NEWBORNS TREATED WITH TWO VENTILATORY STRATEGIES: HFOV AND SIMV.

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**Background/aim:** Severity of pulmonary dysfunction and later development of chronic lung disease in preterm neonates depends on several factors, including oxygen administration and ventilatory strategies. Aim of this report is the comparison of the effects of high-frequency oscillatory ventilation (HFOV) versus synchronized intermittent mandatory ventilation (sIMV) on serum cytokine levels (IL-6, IL-8, IL-10) during the first week of life.

**Methods:** Forty preterm neonates with RDS and gestational age (GA) <30 weeks were randomly assigned to one of the two above-mentioned ventilation strategies within 30 minutes from birth: Group HFOV; N: 20; mean GA: 27.1±1.4 wks; mean birth weight (BW): 882±157 g. Group sIMV; N: 20; mean GA: 27.4±1.2 wks; mean BW: 936±285 g. At 1, 3 and 5 days, the babies were monitored by means of ventilator indices and three pro-inflammatory cytokines in sera.

**Results:** No clinical or biochemical differences were observed at baseline. The neonates assigned to HFOV benefited from early and sustained improvement in gas exchange (significantly lower FiO2 and significantly higher a/A ratio) with earlier extubation, and showed a significant reduction (p<0.05) of serum IL-6, IL-8 and IL-10 over time, as compared to the neonates assigned to sIMV treatment. In addition, at days 3 and 5, the IL-6 levels were significantly lower in the HFOV group as compared to sIMV patients [median (range) values: 7 (1–47) pg/ml vs 20 (4–144) pg/ml respectively at day 3, and 6 (2–44) pg/ml vs 14 (5–145) pg/ml at day 5, p<0.05].

**Conclusions:** The results of this randomized clinical trial support the hypothesis that early use of HFOV, combined with optimum volume strategy, has a beneficial effect, reducing serum levels of pro-inflammatory cytokines and consequently the acute phase leading to lung injury.

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### MODIFIED APGAR SCORE PREDICTS BETTER MORTALITY IN ASPHYXIATED NEWLY BORN INFANTS.

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**Background:** Heart frequency during resuscitation has shown a higher predictive value than colour regarding mortality in the neonatal period (1).

**Population/Methods:** 255 asphyxiated infants were enrolled. Response to resuscitation using either Apgar score at 1, 2 and 5 minutes, or a modified version, scoring heart rate <60 bpm: 0; 60–100 bpm: 1; >100 bpm: 3; and colour: pale:0, and pink: 1. Other items remained unchanged. Mortality in the neonatal period was compared with both scores.

**Results:** Heart rate <60 bpm at 2 minutes of life had the greatest predictive value regarding mortality in the first week of life.

	(N)	Mortality (d1)	Mortality (d7)	Mortality (d28)	OR 95% CI
Apgar 1 min < 4	78	4 (5.1%)	9 (11.5%)	5 (6.4%)	13 (4.2–39.9)
Apgar 2 min < 4	25	2 (2.6%)	6 (24.0%)	1 (4.0%)	190 (10.6–3426.3)
Apgar 5 min < 4	10	4 (5.1%)	2 (20.0%)	1 (10.0%)	182 (26–1271)
Mod-Apgar 1 min < 4	67	7 (10.4%)	8 (11.9%)	3 (4.4%)	19.2 (5.4–68)
Mod-Apgar 2 min < 4	20	6 (30.0%)	3 (15.0%)	1 (5.0%)	148 (17.2–1275.1)
Mod-Apgar 5 min < 4	8	4 (50.0%)	1 (12.5%)	1 (12.5%)	216 (26–1806)
		Sensitivity	Specificity	(+) pred. value	(-) pred value
Apgar 1 min < 4		0.23	0.97	0.82	0.74
Apgar 2 min < 4		0.36	1.00	1.00	0.90
Apgar 5 min < 4		0.70	0.99	0.77	0.98
Mod-Apgar 1 min < 4		0.27	0.98	0.86	0.76
Mod-Apgar 2 min < 4		0.50	0.97	0.71	0.94
Mod-Apgar 5 min < 4		0.75	0.99	0.75	0.99

**Conclusions:** Increased value for heart rate and diminished value for skin colour enhances predictive value of the Apgar score regarding mortality in neonatal period in asphyxiated neonates. (1) Saugstad OD, Ramji S, Rootwelt T, Vento M. Acta Paediatr 2005 (in press).