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DETERMINANTS OF PERMISSION FOR NEONATAL AUTOPSY, Linda J. VanMarter, Flora Taylor, Michael F. Epstein, Department of Pediatrics, Harvard Medical School, Boston, MA.

A retrospective study of autopsy consent was undertaken to assess the autopsy rate for neonatal deaths and to identify demographic factors that were determinants of permission for autopsy. Of 127 neonatal deaths at the Brigham & Women's Hospital (1/82-9/83), 112 charts were available for review and 84 (75%) had autopsies. Factors which differed between the group which consented to autopsy and that which did not, were:

ACHIEVING SIGNIFICANCE	pVALUE	LEAST LIKELY TO CONSENT
Infant Birthweight	0.0075*	<750 grams
Gestational Age	0.0013*	<27.5 weeks
Cause of Death	<0.010**	Extreme Prematurity
Time in Nursery	0.0045*	<24 hours

Factors close to statistical significance included: maternal marital status, race, type of prenatal care, and the infant's age at death. Factors which were not correlated with permission were: maternal age, language, gravidity, parity, occupation, transfer status, and infant gender. Thus, those at high risk for declining permission might include: parents of extremely premature infants or of infants with very brief nursery stays, and mothers who are clinic patients, unmarried, or Black. Reasons for failure to obtain autopsy permission may be related to demographic factors noted, the attitude of the physician towards the value of the autopsy in those situations, or both.

*Mann Whitney test

** Chi square test

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GROWTH DYNAMICS OF INFANTS OF DIABETIC MOTHERS (IDM) WITH REFERENCE TO NEONATAL MACROSOMIA. Betty R. Vohr and William Oh. Brown Univ., Women & Infants Hosp., Dept. of Ped., Providence, RI.

50 term IDM were followed for 3 yrs. to determine if neonatal macrosomia significantly altered the linear growth pattern. The IDM were divided into 2 groups: large for gestation (LGA) (b.wt. >90% for gest.) and appropriate for gestation (AGA) (b.wt. >10<90%). The AGA control group (C) was matched for gest. and SES.

	Wt. Kg.			Wt. Gain Velocity (%)			
	AGA	AGA(27)	LGA(23)	CONTROL(10)	AGA	LGA	CONTROL
Birth	3.09±.4	4.03±.4*	2.90±.3+	-	-	-	-
4 mo.	6.4 ±1	6.9 ±1	6.7 ±.8	111±37	74±26*	132 ±27+	
8 mo.	8.2 ±1	9.0 ±1*	8.7 ±1	29±10	33±14	31 ±11	
12 mo.	9.5 ±1	10.3 ±1*	10.1 ±1	17±4	14±6	14.3±7	
24 mo.	12.6 ±2	13.2 ±1	12.7 ±2	28±8	26±9	23.8±8	
36 mo.	14.9 ±2	15.9 ±2	14.4 ±2	20±11	19±9	16 ±4	

*LGA vs AGA <.05 +LGA vs C <.05 () = n
Although LGA infants remain significantly heavier at 8 and 12 mo., the difference diminishes because of a significantly slower weight gain velocity for LGA between birth and 4 mo. Length and head circumference assume similar growth patterns. Mean caloric intake did not differ at 4, 8, and 12 mo. and skinfold thickness at 3 yrs. was similar among groups. We conclude that, although macrosomic IDM are heavier and longer during the first year, they do not remain so during the second and third year because of slower growth velocity.

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Late Onset Sepsis in Infants with Bowel Resection. M. Walsh, E. Simpser, (Spon. W. Speck), CWRU, Dept. Ped
We observed an unexpectedly high incidence of late sepsis in infants with bowel resection. To define the epidemiology of sepsis, we reviewed the records of all infants with bowel resection from 1978-83. 50 infants had resection for: NEC-38, Gastroschisis-3, Hirschsprung-3, atresia-4, other-2. 19(38%) had 27 episodes of late sepsis, as defined by clinical deterioration plus positive blood cultures. Onset of sepsis was 17 wks. (range 1-71) after surgery. In 3 episodes, cultures (S.epidermidis, enterococcus, and streptococcus) from a central venous line(CVL) were positive, with negative peripheral blood cultures. In the remaining 24 episodes Enterobacteriaceae-12, Candida-4, S.epidermidis-2, S.aureus-2, enterococcus-2, S.pneumonia-1, and alpha-streptococcus-1 were recovered. Sex, race, birth wt. (1.9v2.1kg), primary diagnosis, age at resection, cms. resected (26.8v18.4), presence of ileocecal valve (37v47%), or enterostomy (89v75%) were similar in septic and nonseptic infants. However, septic infants had a CVL more frequently than those without sepsis (89v63%). (p 0.05). 21 of 27 episodes(77%) occurred with a CVL in place. 4 (21%) in the septic group died: 2 with gram negative sepsis, 2 from complications of long-term ventilator therapy. We conclude that infants with bowel resection are at increased risk for sepsis, particularly gram negative sepsis. A CVL may increase this risk. In these patients, a high index of suspicion of sepsis, meticulous catheter care, and early catheter removal is prudent.

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THE EFFECT OF VIRAL LOWER RESPIRATORY TRACT INFECTION IN INFANCY ON PULMONARY FUNCTION IN CHILDHOOD: A PROSPECTIVE STUDY. Robert C. Welliver, Deborah Rinaldo, Katherine Riddlesberger, Fearay L. Ogra, SUNY at Buffalo, Children's Hospital of Buffalo, Department of Pediatrics, Buffalo, New York.

A group of infants who developed bronchiolitis in the first 18 months of life and a control group of normal infants were followed from birth through six years of age in order to determine the effects of viral infections on long-term lung development. Epidemiologic data concerning family history of atopic disease, breast-feeding and exposure of subjects to cigarette smoke were obtained. At age 5 to 6 years, subjects had detailed pulmonary function testing. Over 70% of the infants with bronchiolitis developed recurrent episodes of wheezing during the study period. No single factor was predictive of the development of bronchiolitis or wheezing. However, breast-feeding, exposure to cigarette smoke in the home and magnitude of cell-mediated immune response to respiratory syncytial virus (RSV) at the time of primary RSV infection were strongly predictive of the development of recurrent wheezing and/or number of episodes of wheezing. When tested at 5 to 6 years of age, over 15% of the bronchiolitis group had reduced FEF₂₅₋₇₅ and/or reduced FEF₅₀ (less than 60% of expected for age) while none of the controls had such a reduction RV/TLC ratios were increased (>1.75) in 26% of bronchiolitis patients vs. 4% of controls (0.1>p>0.05). These data indicate that intrinsic as well as environmental factors determine the frequency with which wheezing episodes occur in early childhood and may have some effect on development of the small airway.

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PARAINFLUENZA BRONCHIOLITIS: ROLE OF ENVIRONMENT IN PATHOGENESIS AND OUTCOME. Robert C. Welliver, SUNY at Buffalo, Children's Hospital of Buffalo, Department of Pediatrics, Buffalo, New York.

In order to determine the natural history of bronchiolitis (Br) due to parainfluenza virus (PV), 52 infants were followed prospectively from birth or from the time of an episode of Br due to PV until 4 years of age. Data concerning the presence of atopic disease in family members, breast-feeding and exposure of the infant to cigarette smoke were obtained initially, and patients were then observed at the time of all subsequent episodes of respiratory illness. Twenty-eight infants with Br due to PV and 24 control infants with PV infections resulting in upper respiratory illness (URI) alone were evaluated. Subjects with Br due to PV were more commonly males (70.8% vs. 46.4%) and more frequently had been breast-fed (73.9% vs. 42.9%) in comparison to controls (p<0.05) but did not differ in terms of family history of atopic disease or smoke exposure. Subsequent wheezing episodes occurred in 87.5% of Br patients vs. 16.7% of controls (p<0.01). Subsequent infection with respiratory syncytial virus resulted in wheezing among 94.1% of patients with Br due to PV vs. 16.7% of controls (p<0.01). Subsequent wheezing episodes occurred more commonly following the initial episode of Br due to PV, if the patient was exposed to cigarette smoke (3.1 vs. 1.9 if not exposed, p<0.05) and if the infant had not been breast-fed (3.1 vs. 1.3 if breast-fed, p<0.01). These observations suggest that several environmental factors appear to play a major role in the development of recurrent wheezing following bronchiolitis due to parainfluenza virus.

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THE RELATIONSHIP OF CHILDHOOD AND ADULT BLOOD PRESSURE--30 YEARS LATER. Ruth Whittmore, G.J. Beck, Lisa McKay. Yale University School of Medicine, Section of Pediatric Cardiology, New Haven, CT, USA.

Blood pressure (BP) was reexamined 30 years later in 529 (62.2%) of 984 normal white children. In adults, normal BP was <140/90, borderline 140-160/90-95, elevated >160/95. In children, normal was <90th percentile (%tile), borderline 91-95 %tile and elevated >95th %tile. In males who were normal in childhood, 61% developed borderline or elevated BP, but this occurred in only 37.3% of females. Childhood weight predicted adult hypertension (HBP) better than childhood BP. Analysis of variance identified significant HBP in both sexes if the hemoglobin (Hgb) >15 gms (p <.01), also in younger adults (<41 yrs.) who had cholesterol level >230 mgm% (p <.005). In logistic analysis of childhood variables, in girls over 12, the higher the diastolic BP (DBP) or the heavier they were, the greater the probability of HBP as an adult. Using adult and childhood variables, the relative risk of adult HBP increased by 5% for each mm. of mercury of childhood DBP in females. Other risk factors in males included adult weight %tile, cholesterol > 230 mgm%, elevated Hgb; and in females increased quetelet index or alcohol consumption. Lower BP were noted in single individuals and those with higher education. This long term follow-up study indicates the potential contribution of childhood BP to the hypertensive status of the adult.