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COMPARATIVE DEVELOPMENTAL PROGRESS OF MULTIPLE BIRTH INFANTS WITH VARYING SEVERITY OF ILLNESS. Susan M. Widmayer and Charles R. Bauer, (Spon. by E.Bancalari) Univ. of Miami, Dept. of Peds., Miami, Florida

Of 124 premature multiple birth infants, 21 were identified as significantly sicker than their sibling(s). This sample included 18 sets of twins and 3 sets of triplets for a total of 45 infants. Infants were defined as the "sicker" or "healthier" based on the fact that their length of hospital stay was different by at least 7 days. The average duration of hospitalization of the sicker sibling was 45.3 days as compared to 18.3 days for the healthier group. This difference is significant at the  $p < .001$  level. The infants were given complete physical and developmental examinations at 12 and 24 months of age corrected for their gestational age. The Bayley Scales of Infant Development were administered by trained examiners blinded to the medical history and current physical status of the siblings. Mental (MDI) and Physical (PDI) scores were compared from the infants' most recent test. It was found that the sicker siblings, as a group, had higher MDI scores ( $\bar{x} = 91.3$ ) than did the healthier sibling ( $\bar{x} = 90.2$ ). Similarly, the PDI for the sicker infants was higher ( $\bar{x} = 94.2$ ) than that of the healthier infant ( $\bar{x} = 92.5$ ). The differences were not statistically significant. These data suggest that compensation for various perinatal complications does occur post-natally. Whether this improved outcome is related to their prolonged hospital stay and the intense and continuous stimulation they receive in this setting or to the special solicitude of the parent(s) for a sicker infant, is unknown.

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INFANTS RELINQUISHED AT BIRTH. Michael W. Yogman and Carlos Herrera. (Sponsored by T.B. Brazelton) Harvard Medical School, Children's Hospital Medical Center, Department of Medicine, Boston.

In order to identify demographic factors associated with the relinquishment of one's newborn at birth, we studied mothers delivering newborn singletons at the Boston Brigham and Women's Hospital between August 1977 and March 1979. 8541 mothers (85% of all deliveries) had previously been interviewed and/or their medical records had been reviewed at the time of delivery. Of these 8541, we identified 67 from social services release forms who consented to relinquish their newborns to social agencies at the time of birth. While the overall prevalence of mothers relinquishing newborns was low (7.8/1000 deliveries) the prevalence was much higher among mothers  $\leq 15$  years old (176/1000),  $\leq 20$  years old (61/1000), single (60/1000) and especially higher among mothers white, single and  $\leq 20$  years old (233/1000). Of all mothers relinquishing newborns, 95.5% were single and 62.6% were  $\leq 20$  years of age. Comparing relinquishers and nonrelinquishers among all white, single, young ( $\leq 20$ ) mothers, relinquishers were less likely to be on welfare (31.5 vs. 28%), more likely to be high school graduates (34.2 vs. 28%) and more likely to have experienced a failure of contraception (18.8 vs. 6.4%). No differences were found in prenatal weight gain, birthweight, gestational age or Apgar scores. Understanding the characteristics of contemporary families who choose to relinquish their newborns should be useful to parents who wish to adopt and may allow us to generate hypotheses about the decision making of parents who choose to relinquish their newborns.

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CAN OBSERVERS RELIABLY ASSESS ACUTE PAIN AND ANXIETY IN ADOLESCENTS? Lonnie Zeltzer and Samuel LeBaron. (spon. by Philip A. Brunell). The Univ. of Texas

Health Science Center, Department of Pediatrics, San Antonio, Tex. Because recent studies of discomfort (dis) and anxiety (anx) reduction in children are based on observer and self-reports, the reliability of these reports and the components of suffering need examination. In our study of 10-18 yr. old patients (pts) with cancer, 210 pt and observer (obs) ratings of dis and anx during bone marrow aspirations and lumbar punctures were compared to determine: (1) if the obs could approximate the pt ratings, (2) if the obs became desensitized to the pt's behavior with repeated observations, (3) if the pt's behaviors varied with age, thus influencing the obs reports, and (4) if self-reports of anx, dis, pain, and pressure (pres) relate to each other in determining the amount of suffering during procedures. The inter-rater reliability (IRR) (Pearson's r) for initial procedures was .68 for anx and .53 for dis, both  $p < .001$ . In subsequent procedures the IRR was unchanged for anx ( $r = .71$ ) and dis ( $r = .60$ ), both  $p < .0001$ . For 13-18 yr. olds the IRR for anx was .50 and dis was .44; for 10-12 yr. olds IRR for anx was .71 and dis was .58 (all  $p < .0001$ ). The IRR for younger pts was significantly higher than in older pts on anx ( $Z = 2.26$ ,  $p < .03$ ) but not dis. Self-reports of anx, dis, pain, and pres were correlated with each other, all  $p < .001$ . The data indicate that an obs can reliably rate the pt's dis and anx in the first contact and the obs does not become desensitized with repeated contacts. Ratings of anx may be more reliable for younger pts. Pt reports of anx, dis, pain, and pres all relate to each other as measures of suffering.

## CARDIOLOGY

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COMPARISON OF HEMODYNAMIC EFFECTS OF DOPAMINE AND DOBUTAMINE IN NEWBORN PUPPIES. Belay Abegaz, Madhu Bhogal, Angelo Ferrara, Delores Danilowicz. New York University School of Medicine, Bellevue Hospital Center, Department of Pediatrics, New York.

The hemodynamic effects of Dobutamine (DOB) and Dopamine (DOPA) were compared in 12 term puppies, 3-5 weeks of age with a mean weight of  $3.13 \pm 1.16$  kg. All dogs were anesthetized with 25 mg/kg of Nembutal. In 8 dogs Dobutamine was infused at 5, 10, 20  $\mu\text{g}/\text{kg}/\text{min}$  followed by Dopamine at the same dose-rate and in the other four the order was reversed. Heart rate (HR), right atrial pressure (RaP), pulmonary artery pressure (PAP), aortic pressure (AoP), left ventricular pressure (LVP) and A-V differences (A-V diff) were measured and cardiac output (C.O.) calculated. Statistical significance was determined by paired 't' and 'F' tests.

Dose of DOB & DOPA	5 $\mu\text{g}/\text{kg}/\text{m}$	10 $\mu\text{g}/\text{kg}/\text{m}$	20 $\mu\text{g}/\text{kg}/\text{m}$
HR	N.S.	N.S.	N.S.
RaP	N.S.	$p < .02$ (DOB>DOPA)	N.S.
PAP	N.S.	$p < .05$ (DOPA>DOB)	$p < .05$ (DOPA>DOB)
LVP	N.S.	N.S.	N.S.
AoP	N.S.	N.S.	N.S.
C.O.	N.S.	N.S.	$p < .05$ (DOB>DOPA)

The statistically significant differences observed were that: PAP increased with Dopamine as compared to Dobutamine at 10 and 20  $\mu\text{g}/\text{kg}/\text{min}$ ; RaP significantly increased with Dobutamine at 10  $\mu\text{g}/\text{kg}/\text{min}$  and the increase in cardiac output at 20  $\mu\text{g}/\text{kg}/\text{min}$  was significantly higher with Dobutamine than with Dopamine.

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LEFT VENTRICULAR PERFORMANCE IN CHILDREN WITH PRESSURE OR VOLUME OVERLOAD: Bruce S. Alpert, Wesley Covitz, Casimir Eubig, William B. Strong (Spon by P.S. Rao), Section of Pediatric Cardiology, Medical College of Georgia, Augusta.

In order to determine whether patients with left ventricular (LV) pressure(P) or volume(V) overload(O) have abnormal reserve capacities, we performed cycle ergometry during catheterization. Seven patients had simultaneous hi-fi LVP, thermodilution cardiac index, and nuclear angiography at rest and during half-maximal supine exercise. There were three groups of patients: 4 with LVPO secondary to aortic stenosis or coarctation; 2 with LVVO, both secondary to mixed aortic and mitral regurgitation; 1 with a normal heart. Two patterns of nuclear ejection fraction were noted: 5 patients, 4 in the LVPO group and the normal patient, had increases during exercise from 4-14%; 2 patients, both in the LVVO group had no change or a fall in ejection fraction. End-diastolic LVP increased during exercise only in the two patients with the abnormal ejection fraction response. Cardiac index and systolic blood pressure increases were similar in all patients. There was a marked increase in end-diastolic V in only one patient with LVVO. LVPO patients showed responses to exercise which were similar to normal. Although the measurements of LV performance in the LVVO patients appeared normal at rest, abnormalities of ejection fraction, end-diastolic P, and end-diastolic V were demonstrated during exercise evaluation. We believe that assessment of LV function by exercise provides data for selecting patients for surgical intervention.

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BLOOD PRESSURE AND HEART RATE RESPONSES TO EXERCISE IN HEALTHY CHILDREN-BLACK vs WHITE: Bruce S. Alpert, E. Victoria Dover, Rollie Harp, William B. Strong (Spon by P.S. Rao), Section of Pediatric Cardiology, Medical College of Georgia, Augusta.

To determine whether responses to dynamic exercise differed between healthy black and white children, we tested 220 white and 182 black children between the ages of 6 and 15 on a cycle ergometer. We analyzed the following variables in relation to race, sex, age, and body surface area: resting systolic blood pressure (SBP); maximum (max) SBP; resting heart rate (HR); HR max. Among the boys, there were no consistent differences between black and white children for resting HR, HR max, or resting SBP. The BP max values were statistically significantly higher in black males in seven of the ten age groups (6,8,9,10, 11,12, and 13 years). When analyzed by surface area, all groups of black males had higher BPmax. Among the girls, no consistent differences were seen for HRmax, and resting BP. Resting HR was lower in the 9 and 10 year old blacks; it was lower in all body surface area groups. BPmax was higher in the 9 and 10 year old blacks; it was higher in blacks over  $1.05\text{m}^2$ . These data suggest that black males have increased peripheral vascular resistance in comparison to their age-matched or surface-area matched white counterparts. The black girls tested may have been more fit (as reflected by decreased resting HR) but still had higher BPmax than white girls. This suggests that possible precursors for the early onset of hypertension in the black population may be demonstrated as early as six years of age.