

# ADOLESCENT MEDICINE

GONORRHEA AND SYPHILIS IN INCARCERATED URBAN ADOLESCENTS: PREVALENCE AND PHYSICAL SIGNS. Terry Alexander-Rodriguez and Sten Vermund (Spon. by M. Cohen)

1 Albert Einstein College of Medicine/Montefiore Medical Center, Department of Pediatrics, Bronx, New York.

During a one year period from July 1983 - June 1984, 285 female and 2236 male adolescents, ranging in age from 9-18 years (89% from 14-16), were screened for gonorrhea and syphilis on entry to a detention facility in New York City. The male prevalence rate for gonorrhea was 3%, for females 18.3%, and the rates for syphilis for males were 0.63% and for females, 2.5%. The rates of gonorrhea without penile or cervical discharge on physical examination were 2.1% for males and 10.9% for females. This high prevalence and the high frequency of presentation without physical signs of illness, indicate the desirability of screening high risk adolescents for these and other sexually transmitted diseases. Our data support the need for programs in detention facilities and, we believe, schools, to encourage use of barrier contraceptives to control gonorrhea, syphilis, chlamydia, human papillomavirus, human immunodeficiency virus, and unwanted pregnancy, among others.

PREDICTORS OF BODY MASS INDEX IN HIGH SCHOOL SENIORS. Marjorie A. Boeck, Daniel R. Neuspiel (Spon. by M.I. Cohen). Montefiore Med. Ctr., Alb. Einstein Col. of Med., Dept. of Pediatrics, Bronx, NY.

2 Factors predicting obesity, as determined by body mass index (BMI=kg/m<sup>2</sup>), were assessed prospectively in a cohort of seniors from an academically select urban high school. 191 students completed a health habits survey and had height and weight measured in 1984 and 1986. 51% were male, 51% white, 28% Asian, 12% black, 6% Hispanic and 3% other. Mean BMI increased between surveys for the entire group ( $\bar{x}$  21.2 to 22.3,  $p < .0001$ ) and for both sexes. 31% gained  $\geq 1.5$  BMI units. Linear regression was used to assess the contribution of individual variables to BMI in 1986. Variables significantly associated with higher BMI in 1986 were: low SES ( $p = .006$ ), male sex ( $p = .048$ ), frequently reading for pleasure ( $p = .045$ ), and maternal overweight as perceived by the student ( $p = .031$ ). Ethnic group, sedentary behaviors other than reading, amount of exercise, and eating behaviors were not correlated with BMI. The change in BMI between 1984 and 1986 was analyzed by including 1984 BMI as an independent variable in addition to the other individual variables; 1984 BMI accounted for most of the variance ( $R^2 = .72$ ). Perception of mother's overweight was inversely related to BMI change ( $p = .040$ ) while perception of father's overweight was directly related ( $p = .090$ ) to increase in BMI. These trends existed for both sexes of subjects. Other variables did not contribute significantly to the variance. The data suggest that while multiple factors contribute to adolescent obesity, change in relative weight during high school is associated in a complex way with the perceived individual weights of both parents.

ELEVATED INSULIN LEVELS IN PRECOCIOUS PUBERTY (PP). Stephen Burstein, Leona Cutler, George W. Moll, Jr., Albert C. Watson, Robert L. Rosenfield. Pritzker Sch. Med., U. Chicago, Dept. Peds., Chicago.

3 Both normal and diabetic children demonstrate impaired insulin-stimulated glucose metabolism during puberty, and adults are similar to prepubertal children in this regard. To determine whether the impairment observed in normal pubertal children occurs in children with PP, we performed oral glucose tolerance tests in 21 children (16 girls, 5 boys; mean age 6.3 y, range 1.1 to 9.6 y) with true PP prior to the inception of the GnRHa nafarelin (NAF) intranasally. Glucose (1.75 g/kg to a maximum of 75 g) was administered po and samples obtained for blood glucose and plasma insulin (IRI) at 0, 30, 60, 120 and 180 min. We studied 16 of the pts during the course of a GnRH infusion test (2 ug/kg/h IV). 11 of the pts (10 girls, 1 boy) were restudied 6 to 12 months following the inception of NAF therapy. All pts were nonobese, on no interfering medications and had fasting euglycemia. Data were compared to those for a group of 9 normal adult males (mean age 22.6 y.)

Although glucose homeostasis was normal in both children and adults, basal IRI (14.0 + 2.0 uU/ml) in the children with PP was more than double that in adults (6.3 + 1.0,  $p < 0.005$ ) and 180 min IRI (35.0 + 5.2) was 3.7 times that of adults (9.6 + 3.1,  $p < 0.001$ ). All intermediate IRI values were higher in the children than in the adults, although not statistically significant. NAF therapy did not change glucose or IRI response.

These data are consistent with sex steroids mediating the impairment of insulin-stimulated glucose metabolism in precocious puberty. This impairment does not appear to be readily reversible by NAF therapy.

4 THE CONTRACEPTIVE SPONGE AND INNER-CITY ADOLESCENT FEMALES: ATTITUDES, KNOWLEDGE AND USE. Angela Diaz and Leslie R. Jaffe (Spon. by Kurt Hirschhorn). The Mount Sinai School of Medicine, Mount Sinai Hospital, Dept. of Ped., New York, N.Y.

The objective of this study was to evaluate inner-city adolescent females' knowledge, attitude and prevalence of use of the contraceptive sponge. A questionnaire assessing these issues was completed by 208 sexually active adolescent females. The patients ranged in age from 14-20 years (mean = 17.9); 129 (62%) Black and 79 (38%) Hispanic. Of those adolescents currently using a birth control method (159), the oral contraceptive pill was most prevalent (68.5%) and the sponge was least prevalent (1.2%). Only 8 girls had ever used the sponge. Overall knowledge of the sponge was limited; only 15 (7.2%) correctly answered more than half of the knowledge questions. Correct knowledge of the effectiveness of birth control methods was lowest for the sponge (20.2%) and highest for the pill (58.6%). This difference in knowledge was significantly lower for the sponge compared to other contraceptive methods, including the diaphragm, IUD, foam, condoms, rhythm and withdrawal ( $p = .0001$ ). Most (87.9%) of the adolescents demonstrated a negative attitude to the sponge. These results indicate that the contraceptive sponge is poorly understood and seldom used by sexually active inner-city adolescents. We speculate that this is a result of limited information and education about the sponge, in addition to cultural and ethnic factors. Further study is needed to determine if the sponge is a viable contraceptive method for this population.

5 PERCEPTIONS OF PUBERTY: ADOLESCENT AND PARENT RATINGS OF PUBERTAL STAGE, Lorah D. Dorn, Elizabeth J. Susman, Editha D. Nottelmann, George P. Chrousos, College of Human Development, The Pennsylvania State University, University Park, PA; Laboratory of Developmental Psychology, National Institute of Mental

Health; Developmental Endocrinology, National Institute of Child Health and Human Development, Bethesda, MD.

Assessment of stage of pubertal development is important both in clinical research with adolescents and in well adolescent health care. The physical examination needed to establish pubertal stage is not always feasible in some research settings. The purpose of this study was: (a) to examine relations among ratings of pubertal stage done by adolescents, parents, and medical personnel and, (b) to examine whether accuracy of adolescent ratings and parent ratings varied with stage of pubertal development (Tanner criteria). The participants were 46 healthy boys, ages 10-14, and 44 girls, ages 9-14, and their parents. Adolescents and parents rated the adolescents' pubertal stage using photographs of the 5 stages of puberty. Correlations between adolescent and medical personnel ranged from  $r = .77$  to  $.91$ , ( $p < .001$ ). The majority of the adolescents were accurate in their ratings. Adolescents underestimating pubertal stage were at the later stages of puberty and those overestimating were at the earlier stages of puberty. Correlations between ratings by parent and medical personnel ranged from  $r = .75$  to  $.87$ , ( $p < .001$ ). The majority of parents were accurate in ratings. Parents not accurate in pubertal assessment underestimated the stage of adolescents in the later stages of puberty. Results indicate that adolescent ratings and parent ratings are valid assessments of stage of pubertal development.

6 ASSESSING ADOLESCENT PREGNANCY IN AN URBAN POPULATION. Anne K Duggan and Janet B Hardy

This study explored the utility of routinely collected data for planning adolescent pregnancy prevention programs, using Baltimore as a model. The major objective was to assess the influence of community characteristics on the magnitude of adolescent childbearing and abortion, and their relationship, controlling for race.

State and local computer files provided live birth and abortion data for Baltimore residents in 1983. Census data provided denominators for race-specific birth and abortion rates for 15-17 year olds for each of the City's 26 planning districts (PDs), as well as measures of population characteristics and socio-economic status (SES) indicators, e.g. % < poverty level, fertility rate for 35-44 year old women, % < high school graduates. Pearson product-moment correlations were used to assess relationships among PD characteristics and between adolescent birth- and abortion rates and PD characteristics.

PD birthrates/1000 adolescents (range: 0-134.3 whites and 6.1-113.6 blacks) were strongly associated by race ( $r = .55$ ,  $p < .01$ ). PD abortion rates (range: 0-53.0 whites and 19.5-96.2 blacks) were not associated by race ( $r = .02$ ,  $p < .48$ ).

Among whites, both PD abortion rates and birthrates were significantly inversely associated with most SES indicators. Among blacks, however, only birthrates were significantly negatively associated with SES. Abortion rates had a weak but direct association with SES indicators. The stability of these findings was assessed for the period 1981-1985.

The study considers the implications of population differences such as these for the design of pregnancy prevention programs.