among multiple outcomes and IVF cycles per patient, we applied a random effect for each woman and a compound symmetry correlation structure for the multiple outcomes. We adjusted for age, previous live birth, gonadotropin dose, IVF protocol, intracytoplasmic sperm injection, number of embryos transferred, clinic, ethnic group, infertility diagnosis, body mass index, and smoking.

RESULTS: Compared to the lowest HCB exposure group, quartile 1, the multivariable adjusted odds for failed implantation were 1.89 times higher for women in quartile 3, [95% confidence interval (CI) 1.17, 3.06], and 1.87 times higher for women in the highest HCB exposure group, quartile 4, [CI 1.15, 3.06] with a significant test for trend (p= 0.007). No statistically significant associations were found between DDT/DDE and IVF outcomes or between HCB and chemical pregnancy or SAB.

CONCLUSION: There was a statistically significant trend toward increased implantation failure among women with higher serum levels of HCB.

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O-248 Wednesday, October 27, 2010 04:30 PM

URINARY METABOLITES OF DI(2-ETHYLHEXYL) PHTHALATE ARE ASSOCIATED WITH INCREASED RISK OF IMPLANTATION FAILURE AMONG WOMEN UNDERGOING IVF. S. R. Ehrlich, J. D. Meeker, P. L. Williams, D. Wright, J. Petrozza, R. Hauser. Environmental Health, Harvard School of Public Health, Boston, MA; Environmental Health Sciences, University of Michigan School of Public Health, Ann Arbor, MI; Biostatistics, Harvard School of Public Health, Boston, MA; The Fertility Center, Vincent Memorial Obstetrics and Gynecology, Massachusetts General Hospital, Boston, MA.

OBJECTIVE: Di(2-ethylhexyl) phthalate (DEHP) is a plasticizer widely used in consumer products. In rodent studies, MEHP (a metabolite of DEHP) was associated with implantation failure and reduced litter size. We investigated the association between urinary DEHP metabolites and implantation failure in women undergoing IVF.

DESIGN: Prospective cohort study among women undergoing IVF at Massachusetts General Hospital Fertility Center.

MATERIALS AND METHODS: DEHP metabolites were measured by the CDC using on-line solid phase extraction-high performance liquid chromatography-isotope dilution tandem mass spectrometry. Implantation failure was defined as a negative BHCG test (<6mIU/mL) 2 weeks after embryo transfer. Multivariate models applying a generalized estimating equation (GEE) approach, adjusting for correlation between multiple IVF cycles within the same woman, were used to evaluate the association between quartiles of urinary phthalate metabolite concentration (adjusted for specific gravity) and implantation failure. We adjusted for age, protocol and day of embryo transfer (day 5 versus day 3).

RESULTS: Urinary DEHP metabolite concentrations were measured in 79 women (mean age 35.6 yrs) undergoing 96 IVF cycles; 15 women [19 %] had more than 1 IVF cycle. Forty (42%) of the IVF cycles resulted in implantation failure. A significant dose response association was observed between implantation failure and urinary DEHP metabolites, particularly for MEHP (test for trend, p-value=0.002) where odds ratios were 2.05, 3.56 and 7.10 for the second to fourth quartiles of urinary MEHP levels, respectively, as compared to the lowest quartile. Other urinary DEHP metabolites (MEOHP, MEHHP and MECPP) showed similar but slightly weaker patterns of association with implantation failure.

CONCLUSION: Among women undergoing IVF, those with higher DEHP metabolite levels, particularly MEHP, had significantly higher risk of uterine implantation failure.

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O-249 Wednesday, October 27, 2010 04:45 PM

LAPTOP EXPOSITIONS AFFECT MOTILITY AND INDUCE DNA FRAGMENTATION IN HUMAN SPERMATOZOA IN VITRO BY A NON-THERMAL EFFECT: A PRELIMINARY REPORT. C. Avendaño, A. Mata, A. M. Juarez Villanueva, V. S. Martínez, C. A. Sanchez Sarmiento. Nascentis Medicina Reproductiva, Córdoba, Córdoba, Argentina.

OBJECTIVE: The use of laptops has drastically increased in the last years. These devices are commonly used on the lap near the groin area and may expose the human testes to radio frequency electromagnetic waves (WiFi mode) as well as to high temperatures. There is weak scientific information about the possible impact of exposition to laptops on male reproduction. Therefore, we have assessed the sperm exposure to laptops in an in vitro study.

DESIGN: An in vitro prospective study.

MATERIALS AND METHODS: Semen samples from 15 men were evaluated. Semen parameters (concentration, motility, morphology and vitality) were assessed. Motile sperm were selected by swim up and separated in two fractions and incubated 4 hours at controlled temperature (25°C). The first aliquot was exposed to the laptop during the incubation times. The second fraction was incubated without exposition (control group). Motility, vitality and sperm DNA fragmentation (TUNEL) was evaluated after incubation in all samples. Comparisons between groups were performed by Student's t test. Data is expressed as mean ± SD.

RESULTS: Our results showed decrease progresive sperm motility (73,5 ± 8,2 vs 63,6 ± 7,3; $p < 0,05$), increase sperm immotily (18,8 ± 6,9 vs 28,3 ± 7,3; $p < 0,05$) and increase of sperm DNA fragmentation (6,3 ± 8,1 vs 13,1 ± 9,2; $p < 0,05$) in the exposed group vs non exposed. Levels of non progressive sperm motility and vitality did not show significant difference between the two groups.

CONCLUSION: To the best of our knowledge, this is the first study to evaluate the impact of laptops on human spermatozoa. We have demonstrated that exposure to laptops decrease progresive motility and induce DNA fragmentation in human spermatozoa in vitro by a non-thermal effect. We speculate that keeping the laptops (WiFi mode) on the lap near the testes may result in decreased male fertility. Further studies are needed to test this hypothesis and identify the causes why sperm quality is affected by laptops exposition.

Supported by: Internal.

O-250 Wednesday, October 27, 2010 05:00 PM

POLYCHLORINATED BIPHENYLS AND SEMEN QUALITY – LIFE STUDY. G. M. Buck Louis, S. Kim, Z. Chen, A. M. Sweeney, D. Barr, S. M. Schrader. Division of Epidemiology, Statistics & Prevention Research, Eunice Kennedy Shriver National Institute of Child Health & Human Development, Rockville, MD; Epidemiology, Texas A & M Rural School of Public Health, College Station, TX; Emory University, Atlanta, GA; NIOSH, CDC, Cincinatti, OH.

OBJECTIVE: Preliminary evidence suggests that polychlorinated biphenyls (PCBs) may be associated with diminished male fecundity, though much of available evidence utilizes clinical rather than population-based sampling frameworks. In response, we designed the LIFE Study to assess the relation between 36 PCB congeners and semen quality.

DESIGN: Prospective cohort study design.

MATERIALS AND METHODS: 501 couples with a male partner aged >17 years were recruited from households located in 16 counties in Texas and Michigan with presumed environmental PCB exposure. Men (95%) collected semen samples following a two-day abstinence period during the first two months attempting pregnancy and shipped specimens overnight to an andrology laboratory. PCB congeners were summed as a simple total then categorized by purported biologic activity into estrogenic, antiestrogenic and other groupings (ng/g serum). Multiple linear regression utilizing the weighted least squares approach modeled total PCBs and each grouping separately in relation to semen quality endpoints (left continuous) adjusting for age (years), location (Texas/Michigan), and serum cotinine (log transformed).

RESULTS: Total PCBs were negatively associated with total sperm count (beta = -12.5; $p<0.04$) and anti-estrogenic PCBs with amplitude of lateral head displacement (um) (beta =-10.8; $p<0.02$) and beat cross frequency (Hz) (beta=-57.6; $p<0.02$). Serum lipids were not associated with semen quality.

CONCLUSION: Select PCB congeners at environmentally relevant concentrations were negatively associated with aspects of semen quality in this population-based cohort of couples attempting pregnancy. Our findings underscore the importance of assessing chemical mixtures by purported biologic activity of PCBs relative to aspects of semen quality to aid future mechanistic research.

Supported by: Intramural Research Program of the Eunice Kennedy Shriver National Institute of Child Health & Human Development.

O-251 Wednesday, October 27, 2010 05:15 PM

RISKS OF UROGENITAL ANOMALIES IN MALE RELATIVES OF FEMALES WITH MULLERIAN ANOMALIES. A. O. Hammoud, H. Nezam, C. M. Peterson, D. Carrell, M. Gibson. Reproductive Endocrinology and Infertility, University of Utah, Salt Lake City, UT; Andrology and IVF Laboratory, University of Utah, Salt Lake City, UT.

OBJECTIVE: Mullerian and male urogenital anomalies share common genetic, hormonal and environmental etiologic factors. The purpose of this study is to quantify the risk of urogenital anomalies in male relatives of women with Mullerian anomalies.

DESIGN: Kinship analysis.

MATERIALS AND METHODS: Patients were identified by ICD codes from the largest hospitals in the state of Utah (1994 to 2009). We included all patients who were coded for doubling of the uterus or Mullerian anomalies. Controls for the probands were matched based on birth year and sex (1:5). All records were subsequently matched to the Utah population data base (UPDB) to obtain pedigrees with inclusion of data regarding male urogenital anomalies and to perform kinship analysis. The prevalence of the following urogenital anomalies (undescended testis, hypospadias, epispadias, anomalies of the penis, or other male genital anomalies) in all male relatives of the probands was compared to controls. The Kinship analysis software kingless was used to compute the relative risks for urogenital anomalies among male relatives of probands with female Mullerian anomalies.

RESULTS: The probands comprised 2939 women with Mullerian anomalies. Males with urogenital anomalies identified through ICD codes were 10176 patients. First degree (children, parent) male relatives of women with Mullerian anomalies had a RR of urogenital anomalies of 1.43 (1.09 - 1.89). This risk was largely limited to children of the probands (RR=1.47, 1.1 - 1.97). No parents of the probands or controls were affected. Relative risks for the other kinship classes were not significantly elevated. The prevalence of anomalies in male children of women with Mullerian anomalies were as follows: undescended testis (53%),hypospadias (36%), epispadias (0%), anomalies of the penis (29%) and other male genital anomalies (1.5%).

CONCLUSION: Urogenital anomalies appear to be increased in male children of women with Mullerian anomalies. Undescended testis and hypospadias are the most common anomalies.

Supported by: Departmental.

O-252 Wednesday, October 27, 2010 05:30 PM

EARLY LIFE EXPOSURE OF MALE MICE TO DIOXIN AFFECTS PLACENTAL DEVELOPMENT IN UNEXPOSED PREGNANT FEMALE PARTNERS LEADING TO PRETERM BIRTH. K. L. Bruner-Tran, M. E. McConaha, T. Ding, K. G. Osteen. OB/GYN, Women's Reproductive Health Research Center, Vanderbilt University Medical School, Nashville, TN.

OBJECTIVE: Preterm birth (PTB) is the leading cause of perinatal mortality and morbidity in industrialized nations. Although numerous risk factors for PTB have been identified, PTB frequently occurs in women with no known risk factors, suggesting additional influences. Since the placenta, which is largely a paternally derived organ, is critical to successful pregnancy, we examined the potential contribution of paternal dioxin exposure on the incidence of PTB in an otherwise healthy female.

DESIGN: Laboratory based study.

MATERIALS AND METHODS: Pregnant mice were given the environmental toxicant dioxin (10 ug/kg) on gestation day 15 (E15). Adult male offspring (F1) and unexposed males (controls) were mated with unexposed females. Pregnant females were monitored to observe gestation length or sacrificed on E18 for histological examination of placental/decidual units, cervices, and ovaries.

RESULTS: All females mated to unexposed males delivered at term (E20) while 35% of females mated to F1 males exposed to dioxin delivered 24-36 hours early. Histological assessment of control placental/decidual units displayed a clear distinction between the labyrinthine, junctional, and decidual zones and abundant progesterone receptor (PR) while units from F1 males were highly disordered and exhibited alterations in collagen deposition and diminished PR. Histological examination of the ovaries and cervices by caspase-3 and Muc1, respectively, revealed normal ovaries with minimal evidence of luteolysis in females mated to unexposed males. Cervices from these animals displayed limited mucous production, indicating minimal cervical ripening. In contrast, females mated to F1 males displayed ovaries with evidence of luteolysis and cervical ripening was also evident.

CONCLUSION: Our study provides evidence that paternal exposure to a common environmental toxicant may represent a previously unrecognized risk for PTB.

Supported by: Vanderbilt University and The Endometriosis Association.

FIBROID SPECIAL INTEREST GROUP

O-253 Wednesday, October 27, 2010 03:45 PM

SERUM VITAMIN D3 LEVEL INVERSELY CORRELATES WITH TOTAL FIBROID TUMOR BURDEN IN WOMEN WITH SYMPTOMATIC UTERINE FIBROID. M. S. Abdelraheem, A. Al-Hendy. OB/GYN, Sohag Medical School, Naser, Sohag, Egypt; OB/GYN, Meharry Medical College, Nashville, TN.

OBJECTIVE: Our aim is to evaluate the correlation between serum levels of Vitamin D and the UF tumor burden (mean UF volume and mean number of UF).

DESIGN: Cross sectional observational study.

MATERIALS AND METHODS: After approval of Meharry Medical College Institutional Review Board (IRB) (020814PC145 04), We followed up 67 women with symptomatic UF over a period of 2 years; both number and size of uterine fibroid were measured serially every month for the first 3 months then every 6 months thereafter (a total of 7 ultrasonic evaluations/subject). The volumes for fibroids were measured using a formula of the prolate ellipsoid at every visit and the mean values of all measurements were estimated at the last visit. Vitamin D (25-hydroxyvitamin D3) was measured once for every patient within the first year of the study.

RESULTS: We present the data of 56/67 participants who completed all the study visits and ultrasound evaluations. The study participants were retrieved from two different centers; Meharry Medical College, TN, and Penn state University, PA. Of the study participants 33 were black and 23 were white, all had ultra-sonography measurable UF. The mean level of serum vitamin D in blacks (32. $\pm$ 12. nmol/L) was significantly lower than whites (71.6 $\pm$ 28.8 nmol/L) (P= 0.00). we identified a statistically significant inverse correlation (R=0.263, $P \leq 0.05$) between the serum level of Vitamin D and the UFs volume, as well as between the serum Vitamin D level and the mean number of UFs (R=0.261, $P \leq$ 0.05).

CONCLUSION: There is an inverse correlation and dose-response relationship between serum Vitamin D3 levels (25-hydroxyvitamin D3) and UF tumor burden in both black and white women with symptomatic UFs.

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O-254 Wednesday, October 27, 2010 04:00 PM

AGE AND RACIAL/ETHNIC DIVERSITY IN UTERINE LEIOMYOMA. N. Foyouzi, E. B. Johnstone, M. Rosen, C. Addauan-Andersen, B. Sternfeld, M. Cedars. Department of Obstetrics, Gynecology and Reproductive Sciences, University of California San Francisco, San Francisco, CA; Kaiser Permanente Division of Research, Kaiser Permanente Northern California, Oakland, CA.

OBJECTIVE: Uterine fibroids are the most common benign tumors of women. Fibroids are more common in African American (AA), and the prevalence increases with age, but little is known about other races. We examined the effects of age, race, BMI, and hormonal markers on fibroid prevalence in a large, multi-ethnic population.

DESIGN: Cross-sectional.