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AEP825

Influence of air pollutants of vehicular origin in hormonal and seminal parameters of traffic controllers

Elaine Maria Frade Costa[1], Paulo de Nóvoa Cardoso[1], Thiago Afonso Teixeira[2,3], Mariana Kim Hsieh[4], Alessandra Renck[1], Juliana Andrietta[2], Juliana Risso Pariz[3], Jorge Hallak[2,3] & Paulo Hilario Nascimento Saldiva[5]
[1]Faculdade de Medicina da Universidade de Sao Paulo, Development Unit, Department of Endocrinology, Sao Paulo, Brazil; [2]Faculdade de Medicina da Universidade de Sao Paulo, Section of Andrology, Division of Urology, Department of Surgery, Sao Paulo, Brazil; [3]Androscience, High Complexity Clinical and Research Andrology Laboratory, Sao Paulo, Brazil; [4]Faculdade Israelita de Ciências da Saúde Albert Einstein, School of Medicine, Sao Paulo, Brazil; [5]Faculdade de Medicina da Universidade de São Paulo, Reproductive Toxicology Unit, Department of Pathology, Sao Paulo, Brazil

Sao Paulo is the most populous city in Brazil and its huge number of vehicles contributes for a higher concentration of air pollutants that may interfere in human fertility. The aim of this study was to evaluate the influence of air pollution of vehicular origin on hormonal and seminal parameters of traffic controllers. Clinical history, physical examination (testicular volume, presence of varicocele, cryptorchidism, malformations), hormonal (estradiol, LH, FSH and total testosterone) and seminal parameters (concentration, motility, morphology by WHO´s criteria and Kruger´s strict criteria, leukocytes detection test, CK, ROS and anti-sperm antibody tests) were carried out in 62 traffic controllers (exposed group) and in 210 proven fertile men from the pre-vasectomy group of Urologic Clinic at Hospital das Clinicas – University of Sao Paulo (control group). Exposition to air pollution was analyzed through the dispersion of pollutants recorded by Cetesb, generated in the software SURFER 8.0. Hormonal levels were at normal range in both groups: Estradiol ($P=0.119$), LH ($P=0.644$), FSH ($P=0.140$) and Total Testosterone ($P=0.365$). Traffic controllers presented bigger testicular volume than pre-vasectomy group ($P<0.001$). Sperm concentration was homogeneous in both groups ($P=0.395$): traffic controllers presented mean of 124.9×10^6/ml and pre-vasectomy group 110.1×10^6/ml. Exposed group presented total motility (60%) diminished than control group (65%) ($P=0.047$), as progressive motility was also diminished in the exposed group ($P<0.001$). The sperm morphologies as by WHO´s criteria (exposed group=12%; control group=20%), as by Kruger´s strict criteria (exposed group=3%; control group=6%) were significantly diminished in the exposed group ($P<0.001$). Sperm maturity marker CK was at normal range at both groups, but higher in the control one ($P<0.001$). Anti-sperm antibodies and ROS were elevated in both groups, however it was not significant ($P=0.382$ and $P=0.141$, respectively). Air pollution has a deleterious effect on sperm motility and morphology but not in male hormonal levels. It also causes elevation of ROS levels, indicating deficit in sperm function, and elevation of anti-sperm antibodies levels, suggesting that air pollutants would have transposed the blood-testis barrier. Testicular volume in the exposed group was higher than those measuredin the control group; we can suppose that it must occur due to an inflammatory reaction against the polluting agents. Although the significant difference in air pollutants concentrations between groups, no direct correlation to seminal parameters could be demonstrated.

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AEP826

Assessment of the status of the pituitary-gonadal axis in men who have been using androgenic anabolic steroids for a long time

Mykola Lykhonosov[1,2], Alina Y. Babenko[2], Viktor A. Makarin[1] & Yuri N Fedotov[1]
[1]University hospital of Saint-Petersburg State University, Street Petersburg, Russian Federation; [2]Pavlov First Saint Petersburg State Medical University, Street Petersburg, Russian Federation

Background
The study of the state of the pituitary-gonadal axis (PGA) in users of anabolic androgenic steroids (AAS) is important. The severity of inhibition of luteinizing (LH), follicle-stimulating (FSH) hormones, total testosterone (Tt), inhibin B may depend on the type of AAS used, its doses, the simultaneous use of several types of AAS and the duration of their administration.
Aim
To evaluate the levels of LH, FSH, Tt and Inhibin B depending on the type, dose, pattern and duration of the use of AAS.
Methods
An observational prospective study was conducted among male AAS users. During the use of AAS, LH, FSH, and Tt levels were determined by the immunochemiluminescent method, and the inhibin B level was determined by an enzyme immunoassay. Data are presented as median and interquartile range. We used the Fisher's exact test, Spearman's Rank correlation coefficient. The differences were considered statistically significant at $P<0.05$.
Results
44 male volunteers were examined, median age 29 [27.75;34] years, the duration of the use of AAS were 6 [3.52; 7] months. AAS: testosterone propionate 97.7% ($n=43$), dihydrotestoserone derivatives 65.9% ($n=29$) and 19-nortestosterone 47.7% ($n=21$). One drug were used 18% ($n=8$), 2 drugs 50% ($n=22$), 3 drugs 32% ($n=14$) participants. Doses of injectable preparations varied: from 750 mg per week 25% ($n=11$), to 1000 mg 36% ($n=16$), above 1000 mg 39% ($n=17$) men. Laboratory tests while using AAS: LH-0.2 mIU/ml [0.04; 0.47], Tt-4.34 ng/ml [1.05; 8.81]. The discrepancy between low levels of LH(0.2 mIU/ml) and normal testosterone levels is explained by exogenous testosterone. In our study, men with high levels of Tt were 29.5% ($n=13$), and the maximum value of Tt was 45.56 ng/ml (157.96 nmol/l). In the study, the number of men with a LH level <1.24 mIU/ml were 84% ($n=37$) and Tt<3.4 ng/ml was 47.7% ($n=21$) participants. Inhibin B levels during AAS use: 131.7 [72.3;166.4] pg/ml. LH was lower when large doses of AAS were used ($P=0.003$), when more AAS was used together ($P<0.001$), and in cases of dihydrotestosterone ($P=0.018$) or 19-nortestosterone ($P<0.001$). Similar data were obtained for FSH, Tt, Inhibin B. A significant correlation was established between the duration of AAS use (–0.794; $P<0.001$), the amount of AAS (–0.411; $P=0.003$), the dose of AAS (–0.726; $P<0.001$), the type of AAS (–0.602; $P<0.001$) and LH levels.
Conclusion
A significant negative effect of the type, dose, duration of use and amount of simultaneously administered AAS on the levels of LH, FSH, Tt and Inhibin B were revealed.

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AEP827

Testosterone (T) is poorly related to sexual desire and Erectile Dysfunction (ED) in Young/Middle Aged Human immunodeficiency virus (HIV)-Infected Men

Sara De Vincentis[1,2], Maria Chiara Decaroli[1,2], Chiara Diazzi[2], Fabio Morini[1], Davide Bertani[1], Flaminia Fanelli[3], Marco Mezzullo[3], Daniele Santi[1,2], Giulia Tartaro[1,2], Enrica Baraldi[4], Simonetta Tagliavini[4], Uberto Pagotto[3], Giovanni Guaraldi[5] & Vincenzo Rochira[1,2]
[1]Unit of Endocrinology, Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Modena, Modena, Italy; [2]Unit of Endocrinology, Department of Medical Specialties, Azienda Ospedaliero-Universitaria of Modena, Modena, Italy; [3]Endocrinology Unit and Center for Applied Biomedical Research (CRBA), Department of Medical and Surgical Sciences, University of Bologna – S. Orsola-Malpighi Hospital, Bologna, Italy; [4]Department of Laboratory Medicine and Anatomy Pathology, Azienda USL of Modena, Modena, Italy; [5]Multidisciplinary Metabolic Clinic, Unit of Infectious Diseases, University of Modena and Reggio Emilia, Modena, Italy

Background
ED is highly prevalent in HIV-infected men. T leads sexual behavior in men, but preliminary data suggests that ED is poorly related to serum T in HIV-infected men.
Aim
To explore the relationship between sexual function and gonadal function in young/middle-aged HIV-infected men.
Methodology
Prospective, cross-sectional, observational study on HIV-infected men (age <50 years). Serum TT was assessed by the gold standard LC-MS/MS. Sex hormone-binding globulin (SHBG) was measured by chemiluminescent immunoassay and calculated free T (cFT) was obtained by Vermeulen equation. Biochemical hypogonadism was defined as TT levels below 320 ng/dl and/or cFT levels below 64 pg/ml. The validated International Index of Erectile Function (IIEF)-15 questionnaire was used to identify the presence of ED (score <25) and its degree. IIEF-5 was performed to check if it is reliable as IIEF-15 in this setting.
Statistical analysis
Continuous and categorical variables were compared using ANOVA univariate and Chi-Square test. Correlations were performed using linear regression models.

Results
315 consecutive HIV-infected men were enrolled (mean age 45.3±5.3 years; mean duration of HIV-infection 16.3±8.8 years). A total of 187 patients (59.7%) had ED at IIEF-15; 59 patients (31.5%) presented a severe form of ED (score <10). Considering gonadal function, 35 patients (11.1%) had T deficiency. Scores of EF ($P=0.039$) and sexual desire ($P=0.015$) domains were higher in hypogonadal than eugonadal men. Accordingly, the prevalence of ED raised to 71.4% among hypogonadal men. By considering ED severity, patients with severe ED showed a longer duration of infection ($P=0.039$) and lower cFT levels ($P=0.041$) than patients with mild ED. No difference was found for age ($P=0.224$) and TT levels ($P=0.110$). IIEF-15 score was inversely related to duration of infection ($R^2=0.030$, beta=–0.173, $P=0.002$) and patients' age ($R^2=0.020$, beta=–0.140, $P=0.013$).No significant correlation was found between IIEF-15 score and total T ($P=0.236$) and cFT ($P=0.126$). The erectile function domain at IIEF-15 directly correlated with IIEF-5 score ($R^2=0.545$, beta=0.778, $P<0.001$).
Conclusions
In our HIV-cohort of young/middle-aged men, the prevalence of ED and T deficiency were high being of 60% and 11%, respectively. Serum TT and cFT did not correlate with sexual function parameters, even though sexual desire was lower in men with hypogonadism. ED seems to be better predicted by other factors, such as the duration of infection in this clinical setting, rather than the gonadal status. Furthermore, IIEF-5 seems to be as reliable as IIEF-15 for ED diagnosis in HIV-infected men.

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AEP828

Partial androgen insensitivity: A case report

Rihab Laamouri, Bchir Najla, Zouaoui Chadia, Ben Salem Maram, Jaidane Amel & Ouertani Haroun
University of Tunis Manar- Faculty of medecine, Tunis, Tunisia

Introduction
Androgenic insensitivity syndrome (AIS) is an X-linked genetic disease characterized by resistance to the actions of androgen in an individual with 46, XY karyotype. It is the most common cause of DSD in 46, XY individuals.
Case report
We report a case of a 16-year-old girl who consulted for primary amenorrhea and hirsutism. Our patient had a 9-year-old sister who was operated for an inguinal hernia and the anathomopathological study concluded to a testicular tissue. Physical examination revealed virilization signs: clitoridomegalia, deepening voice and muscle enlargement, female external genitalia and a blind ending vagina. Hormonal evaluation revealed markedly elevated testosterone (6.4 ng/ml), FSH, and LH serum levels. AMH level and dihydrotestosteronemia were low. HCG test showed an increasing testosterone level after HCG stimulation. Diagnostic imaging, including an abdominal ultrasound and a pelvic MRI, showed missing uterus and fallopian tubes and confirmed the presence of two solid structures compatible with gonads measuring 14 mm at the right and 24 mm at the left. Chromosomal analysis confirmed 46, XY karyotype with intact SRY. The patient underwent genetic testing, revealing no androgen receptor mutation. Therapeutically, the patient has benefited from a psychological support and bilateral gonadectomy is programmed especially since alpha foeto protein level was high.
Conclusion and comments
The androgen insensitivity is a rare pathology. Molecular diagnosis is achieved in almost all patients with complete AIS and in a lower frequency in PAIS individuals. In PAIS there is a risk of degenerancy in 20% of the patients, and bilateral gonadectomy is recommended in all individuals raised in the female social sex. In AIS, gender identity usually follows the sex of rearing, but sexual functioning and quality of life can be compromised, that's why it is important to keep patients in psychological care.

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AEP829

Gut microbiota and oral contraceptive use in polycystic ovary syndrome

Damla Eyupoglu[1], Koray Ergunay[2], Aylin Acikgoz[3], Yakut Akyon[2], Engin Yilmaz[4] & Bulent Okan Yildiz[5]
[1]Hacettepe University, Department of Internal Medicine; [2]Hacettepe University, Department of Medical Microbiology; [3]Hacettepe University, Department of Nutrition and Dietetics; [4]Acıbadem Mehmet Ali Aydınlar University, Department of Medical Biology; [5]Hacettepe University, Division of Endocrinology and Metabolism

Context
Polycystic ovary syndrome (PCOS) is a common and complex endocrine disorder. Emerging animal and human data point out to various changes in microbiota that could be linked with the syndrome. However, the effects of therapeutic approaches on gut microbial composition in women with PCOS remain unknown.
Objective
We aimed to assess whether gut microbial composition is altered in overweight/obese women with PCOS and to determine potential impact of oral contraceptive (OC) use on gut microbiota.
Materials and methods
The current study included 17 overweight/obese patients with PCOS and 15 age- and BMI-matched healthy control women. At baseline, clinical, hormonal and metabolic evaluations and gut microbial composition assessment by 16S rRNA gene amplicon sequencing were performed after a 3-day standardized diet. Patients received dienogest-ethinylestradiol (2 mg/0.03 mg) therapy along with general dietary advice for three months after which all measurements were repeated.
Results
Women with PCOS had higher total testosterone (T) and free androgen index (FAI) levels than healthy control women whereas whole body fat mass, fasting plasma glucose, insulin and lipids were similar between the groups. Alpha and beta diversity did not show a difference between PCOS and healthy controls at baseline and remained unaltered after 3 months of OC use in the PCOS group. Relative abundance of Ruminococcaceae family was higher in PCOS patients ($P=0.006$) and did not show an alteration after treatment.
Conclusion
Relative abundance of Ruminococcaceae family is increased in women with PCOS whereas short-term OC use does not alter compositional features of gut microbiota in the syndrome.

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AEP830

Anti-müllerian hormone (AMH) as the primary marker for ovarian reserve in transgender male, with or without pcos, under cronic testosterone treatment

Ines Modrego Pardo[1], Marcelino Gómez Balaguer[1], Sandra Garzón Pastor[1] & Carlos Morillas Ariño[1,2]
[1]Hospital Universitario Doctor Peset, València, Spain; [2]University of Valencia, València, Spain

Background
AMH represents a marker of ovarian reserve and is used in monitoring the effects of gonadotoxic drugs. In PCOS is higher and is an indirect marker of hyperandrogenism. In transsexual man(TM), high prevalence of PCOS is described and AMH provide information about ovarian reserve after exposure to testosterone.
Objective
To assess the prevalence of PCOS in young TM previously to testosterone treatment, study the evolution of AMH levels and differentiate it response patterns according to the presence of PCOS.
Material and methods
Retrospective cohort of TMtreated with testosterone followed between 2010–2018. Levels of AMH, Testosterone, Androstenedione, LH, FSH and Estradiol at baseline and at 6 months after intramuscular testosterone were analyzed. The AMH response was evaluated based on the presence of ovariananalytic hyperandrogenism (AH) previous to treatment (testosterone ≥ 0.7 ng/ml or androstenedione ≥ 5 ng/ml) with or without clinical PCOS (Rotterdam Criteria).
Results
Of 162 HT included, the mean age was 21 years (range 13–39). Baseline AMH 3.5 ng/ml (Interquartile range (IR) 3), Testosterone 0.4 ng/ml (IR 0.1), androstenedione 3.23 ng/ml (IR 1.89), FSH 4.3 mUI/ml (IR 3), LH 5.1 mUI/ml (IR 5) and estradiol 63 pg/ml (IR 79). 8% ($n=13$) of the sample had PCOS (median age19 years (range 15–33)) and 19% ($n=31$) had AH (median age 21 years (range 15–34)), without differences. A correlation was

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