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PS004

Why novel methods are not always the best? – Multifactorial analysis of hyperandrogenism in women

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Aim: The aim of the work was to compare different methods of hormones evaluation, including blood and saliva samples and the realiability of those methods in diagnosing hyperandrogenism among women caused by various reasons.

Introduction: Hyperandrogenism among women is a common problem. There are different hormones that can be evaluated with various methods to diagnose and monitor patients. Less invasive and quicker methods of screening, like salivary samples, more and more are used in medicine. However, they may be not as accurate as expected.

Methods: 39 women with clinical or biochemical hyperandrogenism and 29 healthy individuals in control group were enrolled. The diagnosis of hyperandrogenic syndrome covered: 13 patients with polycystic ovary syndrome (PCOS), 23 with idiopathic hyperandrogenism, 2 with congenital adrenal hyperplasia and 1 adrenal cortical carcinoma. Assessed hormones included: serum total testosterone (T) measured with liquid chromatography-tandem mass spectrometry LC-MS and immunoassay, salivary T by Salimetrics test; DHEA-S, androstendione and 17-OH Progesterone by LC-MS and immunoassay.

Results: In 9 out of 38 patients' results of salivary testosterone showed normal levels, while with LC-MS method increased levels were depicted in the same women. Similarly, 41% women with hyperandrogenism had elevated testosterone with ELISA method, whilst having Salimetrics test results within normal range. In 28% normal testosterone levels measured by LC-MS method, DHES-S was elevated. All patients with elevated androstendione presented with elevated concentration of either testosterone or DHEA-S. Elevated DHEA-S was observed in 56.5% patients with FHS and 15.4% with PCOS.

Conclusion: Salivary testosterone is not a sufficient method in diagnosing biochemical hyperandrogenism. Measurement of serum testosterone by LC-MS itself is not enough to diagnose biochemical hyperandrogenism. DHEA-S should also be evaluated when hyperandrogenism is suspected. Androstendione measurement is not obligatory in diagnosis. This is the first study analyzing numerous hormones with various methods in patients with hyperandrogenism caused by different diseases.[1–4]

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PS151

Comparison between effects of antibiotics, NSAIDs and their mixture on the growth of microorganisms

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Aim: To compare the effects of antibiotics, NSAIDs and their mixture on the growth of microorganisms.

Introduction: Commonly, when a patient has an infection, doctors prescribe NSAIDs for pain and inflammation that may be caused by infection as a part of symptomatic treatment. And antibiotics are also prescribed as an etiological treatment. Our experiment that was performed last year came to a conclusion

that NSAIDs, notably: Aspirin, Ibuprofen and Diclofenac could inhibit the growth of some microorganisms including *Staphylococcus aureus*, *Escherichia coli* and *Candida albicans*. These results, although performed in vitro were promising especially with the growing rate of bacterial resistance towards antimicrobial agents.

Methods: We used antibiotics: Penicillin, Gentamicin and Ceftriaxone; NSAIDs-non-selective: Aspirin, Diclofenac and Ibuprofen and COX-2 selective: Celecoxib. Samples were taken from the oral cavity of patients with liver diseases. Cultures were made of the samples taken and they were inoculated onto an agar plate. Then three well were made in the agar plate: in the first well we put an NSAIDs, second well with an antibiotic and in the third we put the mixture of both NSAID and antibiotic. The agar plates were placed into an incubator for 24 h at a temperature of 37 °C. The experiment was done twice to get accurate results.

Results: The analysis of the obtained results shows that in group 1 (antibiotics) was the highest inhibition 39.3 ± 3.6 mm, in the group 2 in which there were NSAIDs gave the results as shown 31.7 ± 4.1 mm, and last investigative group 3 with mixture was 27.3 ± 1.8.

Conclusion: From the obtained results we can conclude that a mixture of NSAIDs and antibiotics does not improve antibacterial effect of antibiotics. In fact, NSAIDs seem to even lower the efficacy of antimicrobial drugs. Special attention should be paid while administering NSAIDs to patients who are on antibiotic therapy since the combination of these two groups of drugs lower the antimicrobial effect.

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PS003

Comparison of metabolic syndrome rates in living-donor and deceased-donor kidney recipients – A three-year follow-up

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Aim: Comparison of MS rates in kidney recipients.
Introduction: Metabolic syndrome (MS) is characterized by coexistent pro-atherogenic disorders and insulin resistance. MS also increases cardiovascular risk.
Methods: A total of 112 living-donor ($n = 54$) and deceased-donor ($n = 58$) kidney transplant recipients were evaluated for metabolic syndrome (MS) in months 6, 12, and 36. The National Cholesterol Education Program – Adult Treatment Panel III (NCEP-ATP III) criteria were used. Both groups were compared in terms of MS rates. Moreover, correlations between MS and other parameters (age, gender, dialysis type and duration, donor type, immunosuppressant drugs, acute rejection episodes, smoking, levels of triglycerides, uric acid, creatinine, eGFR, and proteinuria) were evaluated. The chi-square, McNemar's test, Student's t test, Welch's t test, Mann–Whitney U test, Fisher's test, and Shapiro–Wilk test were used in the statistical analysis.
Results: MS rates following living-donor (LD) and deceased-donor (DD) kidney transplantation (KTx) in months 6, 12, and 36 were 0.148 vs. 0.276; 0.173 vs. 0.316; 0.235 vs. 0.182, respectively. MS rates in LD KTx recipients were lower than those in DD KTx recipients in months 6 and 12, especially in males (0.14 vs.

0.379; $p = 0.0251$), but they increased systematically in subsequent months of follow-up. MS was more commonly diagnosed in older recipients ($p = 0.019$), with lower MDRD eGFR values ($p = 0.009$), who received more anti-hypertensive drugs ($p = 0.046$). The dialysis type, donor type and the number of transplantations had no effect. The logistic regression model indicated that the factors contributing to MS were elevated uric acid levels and proteinuria.[1,2]
Conclusion:

1. MS rates in LD KTx recipients in month 6 and 12 following transplantation are lower than those in DD KTx recipients.
2. MS rates in LD KTx recipients tended to progressively increase during follow-up.
3. MS was more common in older patients with poorer kidney function, higher uric acid levels and proteinuria.

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PS073

Association between body composition and magnesium level in midlle aged women

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Aim: Aim of the study was to compare total magnesium serum concentration between subjects with increased fat mass in the body composition and subjects with normal body composition as to determine the association between total magnesium serum level and parameters of the body composition and glucose metabolism.
Introduction: Metabolic disorders and chronic diseases may associate alterations in body composition and could be related with disturbances of the magnesium blood level. Obesity is a chronic disease characterized by disturbances of the body composition, commonly associated with disorders of carbohydrate metabolism.
Methods: The study included 40 women with body composition disturbances (increased percentage of the total fat mass) and 20 age matched women with normal percentage of the total fat mass. All subjects underwent analysis of the components of body composition [bioelectrical impedance analysis, fat mass percentage (FAT%), fat free mass percentage (FFM%)], laboratory analysis of blood samples (automated analyzer systems) with determining the parameters of glucose metabolism and total magnesium serum concentration. Insulin resistance index (HOMA-IR) was calculated using equation involving fasting insulin and glucose concentration.
Results: Women with increased percentage of the total fat mass had significantly lower total magnesium serum concentration comapared to control group (0.83 ± 0.07 vs. 0.9 ± 0.06 mmol/l, $p = 0.00$). Moderate correlation was found between serum concentrations of total magnesium and FAT% ($r = -0.47$, $p = 0.00$), FFM% ($r = 0.44$, $p = 0.00$), fasting insulin levels ($r = -0.43$, $p = 0.00$) and HOMA-IR ($r = -0.44$, $p = 0.00$).
Conclusion: Women with increased total fat mass in the body composition have significantly lower total magnesium serum concentration, compared to women with normal body composition.