TESTICULAR URINARY ANDROGENS CHANGES IN HIGH PERFORMANCE TENNIS PLAYERS AFTER COMPETITION

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Introduction:
Tennis is an intermittent intensity sport which average intensity during competition is about 55-65 % VO2 max (1). Physical activity generates stress situations which can be appreciated as hormonal changes depending on effort intensity (2). It has been achieved that after a tennis match, plasmatic testosterone levels decreases and plasmatic cortisol levels increases (3), although more knowledge is needed.

Objectives:
The aim of this study is to determine androgenic urinary profile changes generated after an official match in high level tennis player.

Material and Methods:
This research has been performed with professional tennis players (n=8) situated in top -100 ATP ranking (Age: 24.88 ± 2.59; Height: 1.80 ± 0.05; Weight: 75.63 ± 5.21). Two urinary samples were collected to each sportsman in an official tournament: 1 hour prior to a quarter final tennis match and the first one after finishing it. Androgenic testicular urinary and androgenic suprarenal urinary steroid were determined using chromatographic techniques: GC/MS & GC/MS/MS (4). Results were expressed as ng steroid / mg creatinine. Creatinine concentration were determined by spectrophotometry using Sigma Kit Creatinine 555-A. Wilcoxon test was used for statistical analysis.

Results:
Expressed as: Before match vs After Match (Statistical significance)* p<0,05
Testicular androgens values (ng steroid/mg creatinine)
Testosterone 65,27 ± 35,94 vs 44,66 ± 20,68 (NS)
Androsterone 3564,14 ± 2367,16 vs 2371,98 ± 517,85 (NS)
Etiocholanolone 1735,25 ± 1479,90 vs 738,04 ± 383,54 (NS)
Epitestosterone 75,13 ± 49,22 vs 58,87 ± 33,45 (NS)
DHT 40,22 ± 48,31 vs 46,70 ± 37,70 NS
TOTAL 5480,02 ± 3791,49 vs 3260,26 ± 805,03 (NS)
Suprarenal androgens values (ng steroid/mg creatinine)
Before match After match Statistical significance
DHEA 447,77 ± 801,45 vs 64,36 ± 98,14 (*)
Androstenedione 90,08 ± 154,64 vs 48,69 ± 56,75 (NS)
TOTAL 537,86 ± 777,85 vs 113,05 ± 85,63 (*)

Discussion:
Results obtained suggest that during competition and early phases of recovery, hypothalamic-hypophysyai–suprarenal axis responds in a first way due to suprarenal androgens modifications reached, while hypothalamic–hypophysyai–testicular axis responds secondly, not achieving statistical significance in testicular androgens changes. This could be explained because the short period between the end of efforts and the collection of urinary samples. By other side, average tennis intensity as an acute effort does not seem to modify testosterone values and their metabolites (5).

Bibliography:

Keywords: High Performance, Hormones, Tennis

12th Annual Congress of the ECSS, 11–14 July 2007, Jyväskylä, Finland