

Endogenous testosterone, testosterone precursors and metabolites; 19-norsteroids and establishment of normal urinary levels of these and related compounds.

Results and conclusions

Highly sensitive and specific Enzyme-Linked Immuno Sorbent Assays (ELISA) have been developed and applied to measure endogenous nandrolone, free testosterone and total testosterone in urine samples. Two clinical studies were performed on normal healthy volunteers who were known not to have taken anabolic steroids. The first one aimed to establish normal ranges for urinary nandrolone and testosterone levels in non-exercising subjects and those who routinely exercise for leisure purposes. The second study investigated the effect of a controlled single bout of exercise on urinary levels of endogenous nandrolone, free and total testosterone in female and male volunteers.

An HPLC system that can separate some important anabolic androgenic steroids from glucocorticoids has been developed and established in our laboratories, and work is underway to analyse the urine samples collected from our volunteers under different conditions by this system. Eventually we could produce a correlation between the ELISA results obtained with or without the HPLC separation. Work is still in progress to estimate the low levels of endogenous nandrolone metabolites; 19-norandrosterone and 19-norethiocholanolone, testosterone and testosterone precursors in the urine samples taken from our volunteers in the 2 studies, by a GC-MS system. The results obtained will be compared to those of the immunoassay technique for endogenous nandrolone.

Publications and poster presentations

- 1) Al-Dujaili EAS and Skinner A, The effect of dietary fat intake on salivary and urine testosterone levels in resistance trained men.
5th International Conference on Nutrition and Fitness, Athens, Greece, June 2004.