

Characterization of the Metabolites of New Designer Anabolic Steroids

GRIGORY RODCHENKOV, TIM SOBOLEVSKY and VLADIMIR SIZOI

Antidoping Centre, 105005, Moscow, Elizavetinsky per.10

Five anabolic steroids that have been manufactured by Anabolic Xtreme and Legal Gear and recently entered the market – prostanazol, desoxymethyltestosterone, methasterone, methyl 1alpha and methyl 1P – were investigated. Prior to excretion study the content of capsules was checked by GC-MS to find out if its composition corresponds to that declared on the package. Methyl 1alpha capsules were found to contain a mixture of steroids, the main component being 17 β -hydroxy-17-methyl-5 β -androstane-3-one.

Male volunteers took 20 mg of each steroid (one or two capsules) and the excretion studies were performed accordingly. As a result of our experiments, for prostanazol two monohydroxylated metabolites were detected. Desoxymethyltestosterone produced 10 metabolites: four monohydroxylated metabolites, two of which are 16-hydroxy ones, one dihydroxylated metabolite, two dihydro dihydroxy metabolites, one 3-keto dihydro dihydroxylated metabolite, and two dihydro trihydroxy metabolites). Methasterone was found to excrete mainly intact, also giving one dihydro metabolite. For methyl 1alpha two dehydro metabolites were detected and several metabolites with the same brutto formula as the parent compound but with different retention times.

Excretion study with methyl 1P revealed that the main metabolite was 6(?)-methylandrosterone and the minor – 6-methylandrost-4-ene-3-one. The other steroid components initially observed in the methyl 1P capsule have not been found in urine.