PROJECT REVIEW

"Steroid Profile: Differentiating testosterone administration from (simultaneous) ethanol consumption. Evaluation of newly developed Markers (acronym: SPOL)"

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The screening of the misuse of endogenous androgenic anabolic steroids (EAAS) is currently performed by the quantification of the urinary steroid profile. One of the main problems related with this approach is the great impact of alcohol consumption on the profile. The fact that ethanol affects and invalidates the steroid profile opens the door to the use of ethanol as masking agent for testosterone administration.

Our group has shown that urinary ratios 6OH-Etio3G/EG and 6OH-Andros3G /EG increase after EAAS administration. Conversely, preliminary results show that those ratios decrease after ethanol consumption. This behavior suggests that those two glucuronides may be useful to distinguish between changes in T/E due to ethanol consumption and those due to the combined administration of testosterone and ethanol (used as masking agent). Additionally, the determination of phase II metabolites in alternative matrices is a promising tool for the screening of EAAS misuse and might provide new insights in differentiating testosterone administration from (simultaneous) ethanol consumption.

This project aims to (i) evaluate the usefulness of phase II metabolites to differentiate between the consumption of alcohol alone and its consumption during testosterone administration, (ii) explore the potential of the determination of phase II metabolites in alternative matrices for the screening of testosterone misuse and (iii) look for the differences in a comprehensive steroid profile (in urine, plasma and saliva) between samples collected after testosterone administration and after the combination of testosterone and ethanol. For this purpose, we plan to perform a pilot study with 4 male volunteers. Each volunteer will be treated with placebo, testosterone gel, ethanol and the combination of ethanol and testosterone. Urine, plasma and saliva will be analyzed to look for differences between the different conditions.