

PROJECT REVIEW

“Dose-response effect of alcohol ingestion on steroid profile: gender and ethnic aspects (acronym: profethyl2)”

Dr. R. de la Torre, Dr. W. Shan (FIMIM, Spain)

The introduction of the so called ‘endocrine module’ of the athlete’s biological passport needs to consider the numerous reports showing the effect of ethanol ingestion on the steroid profile. A steroid profile would only be useful for longitudinal monitoring and statistical evaluation if it has not been altered by any uncontrolled circumstance, very particularly alcohol consumption. Preliminary results (Profethyl project) in male Caucasian show that moderate doses of ethanol alter very fast T/E values and variations account for more than 70% change in T/E value that would have triggered a confirmation and IRMS analysis.

Interethnic studies on the T/E ratio have already shown the difficulty in establishing a single threshold value applicable to all ethnicities to evidence testosterone misuse. Asian athletes are those with the lowest mean T/E ratio. This in part is due to the larger prevalence of the deletion polymorphism in the UGT2B17 gene in Asian population that regulates testosterone glucuronidation. Previous studies were performed in male Caucasian healthy volunteers. Alterations seen in males after moderate ethanol consumption should be replicated in women since it is expected that they will be larger because typically display milder first pass metabolism and lower T and E concentrations.

The main objective of the project is to study the intra-individual variation of steroid profile parameters as a result of the ingestion of low doses of ethanol in Caucasian and Chinese males (20 and 40 gr of ethanol) and females (10 and 20 gr of ethanol), being the UGT2B17 polymorphism evaluated as covariate.