PROJECT REVIEW

"Detection of the long-acting testosterone formulation Nebido and influence on blood and steroid profile values"

Pr. P. Van Eenoo, Pr. P. Van Renterghem, (Ghent University, Belgium)

Although recent advances of steroid profiling have shown to substantially increase the detection sensitivity, still, the prevalent of misuse is larger than what doping control laboratories can detect. In particular the introduction of slow-release preparations such as T-gels and steroid patches poses anti-doping analysts for greater challenges as the metabolic footprint of misuse with these preparations is very small.

In 2009, Bayer introduced a long-acting T undecanoate depot Nebido® for therapeutic treatment of hypogonadism in males. Nebido® should be administered only once in two or three months, which is a much longer release period compared to other long-term T-formulations (e.g. Sustanon®). A dose of 1000mg T undecanoate should be injected in the muscle. It is claimed that the insufficient T-levels are restored and do not exceed normal serum levels and likewise cause less unwanted side-effects.

Also, it has been shown that such high T undecanoate doses can lead to elevated hematocrit levels. Moreover, sustained elevated T-levels can exert a beneficial anabolic effect on micro-damaged muscle tissue after long exercise to enhance recovery. Interesting features for endurance athletes, for whom the biological passport is a well-established tool to screen and record their doping test results. In this light, it is assumed that described effects can be noticed in both the steroidal and blood module of the biological passport and help to find Nebido® misuse in this category of athletes. This study aims to investigate the direct detectability of T-undecanoate as administered with Nebido® in blood as well as the influence on various blood and steroid parameters as recorded in the biological passport.