PROJECT REVIEW

"Studies on intra-articular and peri-articular administrations of glucocorticoids"

Dr. R. Ventura, Dr. X. Matabosch (Fundació IMIM, Spain)

Intraarticular (IA) and periarticular (PA) uses of glucocorticoids (GC) are allowed in sports. Results obtained by our group show that concentrations of some GC in urines collected after these administration routes are greater than 30 ng/mL during 24-48 hours after administration. Therefore, the use of some GC by IA and PA routes may result in false positive results according to the current WADA rules. Due to the widespread use of GC by these routes in sports medicine, studies need to be performed to evaluate concentrations in urine of the parent drugs after administration of different GC, and look for criteria to distinguish these allowed uses from forbidden administrations (e.g., intramuscular, IM) when needed. On the other hand, the few published data available show a decrease in plasmatic cortisol concentrations after IA administration of some GC which would suggest a potential systemic effect; no data are available for PA administration.

The objective of the present study will be to perform a thorough study on IA and PA administration of GC. The GC most frequently used in IA and PA therapies will be studied: betamethasone, triamcinolone acetonide and triamcinolone hexacetonide. First, urinary concentrations of GC and their metabolites will be evaluated after IA and PA administrations, and compared with those obtained after IM administration, to define discrimination criteria with adequate sensitivity and selectivity between these administration routes. Second, the potential systemic effect after IA and PA use of GC will be evaluated, by measuring plasmatic concentrations of the parent drugs and cortisol.

The successful outcome of the project will be directly applicable to sports drug testing by improving the discrimination criteria between allowed and forbidden administrations of GC and, therefore, by helping in the evaluation of adverse analytical findings detected in routine doping controls.