ISEI Abstract:

Investigating the use of a Point of Care salivary IgG test in the sporting environment

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ABSTRACT

Introduction

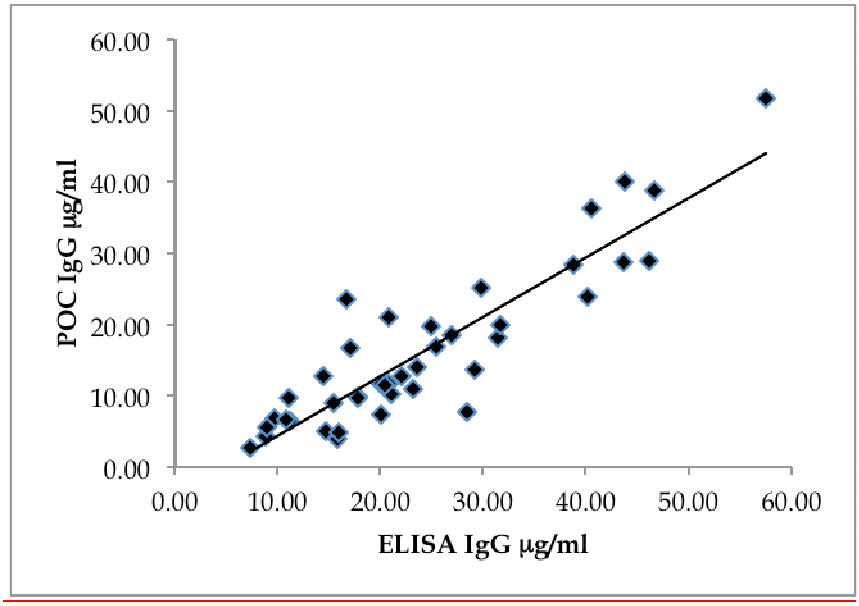
The use of salivary diagnostics within the sporting community has gathered momentum in recent years; with the identification of hormone levels to assist in the optimisation of workloads, or antibody levels to assess individual recovery status and potential immune suppression. Immediate feedback for coaching and support staff via a Point of Care (POC) test would give a significant time advantage over standard laboratory techniques, which often reveal data to sporting squads only days later. This paper assesses a new POC product developed by Ipro for the rapid determination of salivary IgG in comparison to standard laboratory ELISA determination.

Methods

A total of 45 saliva samples were taken from a cohort of English Premier League Senior and Academy soccer players (22.4 ±7.2 yrs) using IPRO OFC collection kits. The samples were taken during routine monitoring: before training sessions. The same samples were assessed immediately on a POC Lateral Flow Device (LFD) to determine salivary IgG concentrations and then taken to a laboratory for subsequent analysis via ELISA within 4 hours of collection. The measurement range for ELISA was 1.75 - 105 µg/ml and POC test 1.6 - 120 µg/ml.

Results

Four samples exceded maximum values on both platforms and were excluded from the analysis. The remaining salivary IgG concentrations measured via ELISA ranged from 7.26 - 57.54 µg/ml and with the LFD from 2.26 - 51.81 µg/ml, with the mean difference 7.90 µg/ml. The relationship between the salivary IgG values obtained using the ELISA and POC test was represented by the formula:
$y = 0.8305x - 3.8109$, with R^2 0.8107.



Conclusion

The POC test used in the sporting environment showed good agreement with the ELISA method for the determination of salivary IgG. Given the quick data turnaround and efficiency in terms of cost, it represents a suitable alternative method for use in sports teams.