Longitudinal observation of Epstein-Barr virus antibodies in athletes during a competitive season.

Abstract:

Epstein-Barr virus (EBV) serology continues to be the first diagnostic test when infectious mononucleosis is suspected. Due to possible mild immunosuppression in competitive athletes, EBV reactivation determined by increases in salivary viral load have been identified as one possible cause in recurrent respiratory infections. The long-term variation in EBV antibody levels in athletes compared to a control group remains unclear. The purpose of the study was to investigate the time course of changes in concentration of EBV antibodies in athletes with special emphasis on antibodies against early antigens (EAs) and avidity determination. During a competition season of approximately 12 months, the serological status of 15 biathletes (age 27 ± 3 years, 7 female, 8 male, international to Olympic level) was compared with 11 controls (age 23 ± 1 years; 1 female 10 male) at multiple time points. In addition, 43 healthy swimmers (age 22 ± 4 years, 18 female, 25 male, national to international level) were tested to validate the results with only two time points interspersed by approximately 6 months of intensive physical exercise. Analysis of quantitative antibody intensity bands revealed stable values during a competition season. In particular, IgG-antibodies against EAs may persist and were found in 15% of past infections in swimmers exhibiting fluctuations in concentration after 6 months. These results provide
evidence that positive Anti-EA-IgG may persist in healthy athletes and thus, should not be used to diagnose EBV reactivations or to identify a compromised immune function.

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