YO-YO INTERMITTENT RECOVERY LEVEL 2 TEST IN YOUNG SOCCER PLAYERS FROM U-13 TO U-18

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Introduction
The Yo-Yo intermittent recovery level 2 test (YYIR2) is widely utilized to evaluate high-intensity intermittent endurance of high-level soccer players. However, the information on physiological relation with the YYIR2 in young soccer players is limited. The purpose of the study was to examine the relationship between incremental progress of YYIR2 result and physiological factors in young soccer players relating with anaerobic and aerobic fitness development.

Methods
Eighty-six male field players aged from 12.2 to 18.2 yrs (U-13 to U-18) participated. The participants performed YYIR2 on a grassed field. They were also evaluated for thigh muscle volume by magnetic resonance imaging. Anaerobic and aerobic fitness were evaluated by the Wingate and VO2max test, respectively. A linear regression analysis and structure equation modeling were performed to analyze the relationships. SPSS 12.0J and Amos 5.0 were used for all statistical analysis. Significance level was set at $p<0.05$.

Results & Discussion
The YYIR2 results (mean (SD)) from the age of 13 to 18 were 420(86), 683(120), 733(168), 814(184), 953(230) and 1172(171) m, respectively. In the pooled data, the YYIR2 result was significantly correlated with either of Wingate and VO2max test results ($r=0.56$ and 0.42). However, the different perspective was immerged when the age factor was considered. The age affected significantly YYIR2 and Wingate test results, but did not VO2max. On the other hand, VO2max affected significantly YYIR2 result while Wingate test did not (Figure 1). From these results, it was suggested that anaerobic fitness associates with YYIR2 more than aerobic fitness in general young soccer players. However, within each age category, aerobic fitness is more important to determine YYIR2 result.

Conclusion
In young soccer players, YYIR2 result is affected greatly by the development of anaerobic fitness with the increment of age.