国内プロサッカー選手における Training Load と外傷・障害発生の関係

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【目的】

　external loadとinternal loadの関係、両者を組み合わせたtraining loadと 外傷・障害発生との関係を明らかにすることを目的とした。

【方法】

　対象は、国内プロサッカーチーム 1 チームに所属する男子選手 23 名(年齢: 23.7±1.8 歳)とし、1 シーズンのデータを収集した。データは、external load として global positioning system で測定された総走行距離、高速走行距離、スプリント距離、加速・減速回数を収集し、acute chronic workload ratio(ACWR)を算出した。internal loadは、尿比重、sit and reach、手振りなし・手振りありバーティカルジャンプ高、眼調整力を収集し、シーズン初めを基準とした変化率を算出した。各 external load と internal loadを単回帰分析にて確認し、回帰式の95%信頼区間の下限値以下をコンディション不良群とし、それ以外をコンディション正常群に区分して外傷・障害発生リスクを比較した。

【結果】

　外傷・障害件数は 46 件、発生率は 5.7 件/1000 athlete-hour であった。各 external load と internal load に有意な関係は確認されなかった。コンディション不 良群と正常群における外傷・障害発生オッズ比にも有意な差は認めなかった。

【結論】

　国内プロサッカー選手において、external load と internal load に関係は認 められなかった。また、external load と internal load 双方の組み合わせと外傷・障 害発生リスクとの関係は認められなかった。

Relationship between Training Load and Injury Occurrence in Japanese Professional Football Players

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[Purpose]

 The purpose of this study was to investigate the relationship between external load and internal load, and the relationship between training load and the incidence of injury by combining the external load and internal load.

[Methods]

 Twenty-three male players (age: 23.7±1.8 years) belonging to one Japanese professional football team were included in the study, and data from one season were collected. Data on total running distance, high-speed running distance, sprint distance, and acceleration/deceleration times, measured by a global positioning system, were collected as the external load, and the acute chronic workload ratio (ACWR) was calculated. internal load was measured as urine specific gravity, sit and reach flexibility, vertical jump height with and without hand gestures, and ocular coordination force. The percentage change from the beginning of the season was calculated. The relationship between the external and internal loads was analyzed by single regression analysis, and the risk of injury was compared by dividing the players into two groups: one with poor condition below the lower limit of the 95% confidence interval of the regression equation, and the other with normal condition other than the poor condition group.

[Results]

 The number of injuries was 46, and the incidence rate was 5.7/1000 athlete-hours. No significant relationship was found between the external and internal loads. There was no significant difference in the odds ratios of injury between the two groups.

[Conclusion]

 In conclusion, there was no relationship between external and internal loads in Japanese professional football players. There was also no relationship between the combination of external and internal loads and the risk of injury.