

研究課題名 スポーツ選手における頸椎および腰椎椎間板変性と遺伝子多型の関連性

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BACKGROUND: The authors previously identified that COL11A1 gene polymorphism is not a susceptibility factor for lumbar disc degeneration (LDD) in athletes. However, the relationship between COL11A1 gene polymorphism and cervical disc degeneration (CDD) remains unclear. We hypothesized that significant associations between COL11A1 4603C/T gene polymorphism and CDD, but not LDD, in collegiate wrestlers exist. This study aims to examine the relationship between CDD, LDD, and COL11A1 4603C/T gene polymorphism in collegiate wrestlers.

METHODS: The subjects enrolled in this study were 92 (Study-1) and 123 (Study-2) Japanese collegiate male wrestlers. Study-1 and Study-2 were conducted in 2010–2012 and 2012–2015, respectively.

RESULTS: CDD and LDD prevalence among the wrestlers was 51.1% (47/92) and 43.9% (54/123), respectively. We found that COL11A1 4603C/T was significantly associated with CDD, but not with LDD. Using logistic regression analysis with concomitant confounding factors, we further confirmed that COL11A1 4603C/T was a significant risk factor for CDD (co-dominant genetic model [CC vs CT+TT]: adjusted odds ratio [OR] = 2.28; 95% confidence interval [CI], 1.13–4.59; dominant genetic model [CC+CT vs TT]: adjusted OR = 11.71; 95% CI, 1.36–101.06).

CONCLUSIONS: Results suggest that COL11A1 4603C/T gene polymorphism is associated with an increased risk of CDD, but not LDD, in Japanese collegiate wrestlers.