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Spinning에 의한 횡문근융해증 발생률의 증가와 중증도 분석

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Increasing Incidence of Rhabdomyolysis due to Spinning and the Analysis of its Severity

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Introduction: Spinning is a grouped exercise program with indoor cycling. This exercise had been started from 1980s and introduced in 2000s to Korea. It was rapidly widespread to most of cities in Korea because it was expected to be effective in weight-loss and strengthening leg muscles. Since mid-2000s, the number of cases of rhabdomyolysis due to spinning was increasing in our center. Moreover, the patients showed severe disease course even though they were young without any past medical history.

Materials and methods: We collected patient data from 1 Jan 2012 to 18 Mar 2015 diagnosed with rhabdomyolysis which was defined serum creatinine phosphokinase (CPK) > 5000 IU/L and/or evidence of muscle damage in whole body bone scan and the absence of brain or cardiac damage. Case of muscle damage by autoimmunity was excluded. (eg. Polymyositis). There were 67 of rhabdomyolysis patients and one patient was excluded because her final diagnosis was polymyositis. We analyzed the incidence of rhabdomyolysis by sex and age and the biochemical parameters [CPK, aspartate aminotransferases (AST), lactate dehydrogenase (LDH) and C-reative protein (CRP)]. In addition, the amount of input and the duration from admission to the days of CPK < 2000 IU/L were analyzed.

Results: The mean age was 47.17±20.69 and most of patients were male (42, 63.6%). The causes of rhabdomyolysis were trauma (20, 30.3%), strenuous exercise except spinning (16, 24.2%), spinning (11, 16.7%) and others (statin, alcohol, sepsis, etc.). In the cases of rhabdomyolysis due to spinning, the mean age was 25.45±5.4 and most of patients were female (10, 90.9%). In the analysis of incidence by sex, that of strenuous exercise except spinning was 38% and 0%, that of trauma was 29% and 33% and that of spinning was 2% in male and 42% in female, respectively. In female under the age of 35, all rhabdomyolysis was caused by spinning. In comparison between spinning and strenuous exercise group, there was statistically significant difference in CPK level, 14912.27±290.95 IU/L and 10881.00±4900.45 IU/L respectively. Additionally, the amount of input and the duration from admission to the days of CPK <2000 IU/L were analyzed. The former were 38556.82±18191.97 mL and 22278.33±17388.20 mL and the latter were 7.45±2.33 days and 4.21±2.48 days, respectively. In comparison between spinning and all other cause except spinning, it showed similar results to the comparison between spinning and strenuous exercise group.

Conclusion: Spinning was a widespread group exercise especially among in young female under the age of 35. However, the incidence of rhabdomyolysis due to spinning was increasing and it could damage muscles more than that of other strenuous exercise, trauma and drug, etc.

Key Words: 횡문근융해증, 급성신손상, 스피닝
Rhabdomyolysis, Acute kidney injury, Spinning