Fish consumption and premenstrual syndrome/premenstrual dysphoric disorder in Japanese collegiate athletes

Takashi Takeda, Yoko Imoto, Hiroyo Nagasawa, Atsuko Takeshita, Masami Shiina, Chizuko Hioki
Division of Women’s Health, Research Institute of Traditional Asian Medicine
Kindai University School of Medicine, Osaka-Sayama, Osaka, Japan

Background: As to the menstrual dysfunction in athletes, most of the studies were concerning with menstrual irregularity, including amenorrhea, and were lacking the data about premenstrual symptoms (PMS/PMDD). Fish is a major source of omega-3 fatty acids and supplementation of omega-3 fatty acids have been shown to be good for the relief of PMS symptoms. The data about the association between PMS/PMDD and fish consumption is lacking.

Main Objective: To determine the specific characteristics of PMS and PMDD in Japanese collegiate athletes, with a focus on their fish consumption.

Methods: A school-based survey was conducted in July 2014 using a sample of 368 Japanese female collegiate students at Kindai University in Osaka, the largest city in western Japan. In total, 225 students were members of sport clubs and 143 students were cultural clubs. We selected students who were members of cultural clubs as non-athletes. We asked the students their severity of menstrual pain and premenstrual symptoms. Dietary habits were also assessed using the dietary intake questionnaire.

Preliminary Results: We analyzed data from 312 students aged 18–23 (average 19.7 ± 1.26 (SD)). The prevalence rate of moderate to severe PMS and PMDD in athletes were 14.5% and 2.5%, and was the same as in non-athletes. The prominent features of premenstrual symptoms in athletes were that the severity of effects on ‘physical symptoms’ and ‘performance in training or competition’ were much higher than in the control group. 43.5% of athletes were found to suffer from athletic performance due to premenstrual symptoms. In terms of dietary habits, ‘Fish or dried fish’ consumption was associated with a decreased risk of poor performance in athletes (OR 0.61, 95% CI: 0.40–0.92).

Conclusions: The results from this study indicate that fish consumption may be positively associated with the relief of PMS/PMDD-induced athletic disturbance.