Leg extension power in heavyweight elite judo athletes

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[Purpose]
This study compared the leg extension power of elite Japanese heavyweight male judoka with that of elite Japanese lightweight male judoka and clarified the exhibited characteristics.

[Methods]
Eleven All-Japan Judo Federation certified heavyweight male judoka and 12 All-Japan Judo Federation certified lightweight male judoka were analyzed. The Aneropress 3500 (Combi Wellness, Tokyo, Japan) was used in this study because it measures leg extension power through movements similar to the knee extension movements in judo throwing techniques. In addition, it allows measurements to be easily gathered while teaching. The measured items included leg extension power, height, weight, body fat percentage, lean body mass, thigh circumference, and crus circumference. A risk ratio of less than 5% was considered statistically significant (P < 0.05).

[Results]
The average leg extension power values were 2169.0 ± 165.5 W and 2105.0 ± 73.9 W for the heavyweight judoka and lightweight judoka, respectively, with the average value for the heavyweight judoka being higher, albeit not significantly (Fig. 1). However, significantly higher height, weight, body fat percentage, lean body mass, thigh circumference, and crus circumference values were recorded in the heavyweight judoka (P < 0.05).

[Conclusion]
These results clarify that while the heavyweight judoka had superior physical characteristics, such as greater lean body mass and thigh circumference, there was little difference in leg extension power between the heavyweight and lightweight judoka.

Fig. 1 Comparison of leg extension power between elite heavyweight and lightweight judo athletes