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Effects of Resistance Training of Different Loads on Gastrocnemius Protein, IGF-I and TNF-α in Aging Rats

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Objective To observe the effects of different load resistance training on skeletal muscle dystrophy in aging rats by observing the expression of protein and protein of IGF-I and TNF-α in aging rats after 8 weeks of different load resistance training. The resistance training delays the theoretical basis for anti-skeletal muscle aging.
Methods 40 aging SD rats (18 months old) were randomly divided into a quiet control group, a non-weight-bearing exercise group, 30% of the largest negative recombination, 50% of the largest negative recombination, and 70% of the largest negative recombination. The sports group carried the treadmill movement with the tail load, the slope was 35°, the running speed was 15m/min, the rest was 30s every 15s, the rest was 3min after four cycles, and the three groups were one cycle. The cycle was intermittent for 10 minutes, and the exercise frequency was the next day for 8 weeks. After 8 weeks, the rat gastrocnemius muscle was taken. The protein content of the gastrocnemius muscle was determined by Coomassie brilliant blue method. The contents of IGF-I and TNF-α in the gastrocnemius muscle were determined by enzyme-linked immunosorbent assay.
Results After 1.8 weeks of different load resistance exercise, compared with the quiet control group, the skeletal muscle protein content of each exercise group increased, among which 50% of the largest negative recombination and 70% of the largest negative recombination was the most significant ($P<0.01$). Compared with 70% of the largest negative recombination, the 50% maximum negative recombination content was relatively high ($P<0.05$);
2. After 8 weeks of different load resistance exercise, compared with the quiet control group, the content of IGF-I in the gastrocnemius of each exercise group was higher than that of the quiet control group, and there was a very significant difference ($P<0.01$), and 50%. The highest negative recombination and 70% of the largest negative recombination content is the highest;
3. After 8 weeks of different load resistance exercise, compared with the quiet control group, the TNF-α content in the gastrocnemius muscle of the rats in each resistance exercise group increased slightly, and the increase of only 50% of the largest negative recombination was statistically significant ($P<0.05$), although there were differences between the exercise groups, there was no statistical significance ($P>0.05$).
Conclusions 50% of the maximum weight-bearing resistance training can effectively increase the skeletal muscle muscle protein content of aging SD rats, and it is related to up-regulation of IGF-I factor and down-regulation of TNF-α factor expression by resistance training.