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Traditional Chinese Medicines and Sports

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In China, the resources of traditional medicines and medicinal herbs are very rich. There are about 5000 species. Traditional Chinese medical science has thousands of years of history. Doctors of traditional Chinese medicine have their own experiences and athletes take traditional medicines for prevention and treatment of their different diseases. As time goes on, we found stimulants and anabolic agents in traditional Chinese medicines, this is a problem, which we have to pay attention to. Quite a lot of Chinese anti-common cold medicines, cough relief medicines, and analgesics contain stimulants. Doctors and pharmacists do not know the regulation concerning drugs in sports and list of forbidden substances. For example, during the opening ceremony of Asia Games in 1986, heavy rain lasted for seveal hours. Quite a few athletes suffered from common cold and took anti-common cold medicines. This was because the anti-common cold medicines, which they had taken, contain Ephedrine.

So, research on stimulants in traditoinal Chinese medicine is an important new project. Our work in this area is still rather limited. Only a few outstanding athletes are able to have the tonic medicines checked by our center. We have found some standard recipe proprietary medicines contain stimulants. For example, "Hua Rong Wei Xiong" contains methyltestosterone.

We have to check and control traditional Chinese medicines used for athletes without prohibiting, meanwhile, we can use traditional Chinese medicines, especially tonic medicines for treating athletes. We have done some research on health function of "Lao Jun Decoction" and we will introduce this work now.

The biochemical parameters and performance capacity were detected in ten male walkers from athletic school before and after three weeks training with the use of "Lao Jun Decoction" (LJD) and "Ginseng Royal Jelly" (GRJ) (two kinds of tonic agents).

The results revealed that the serum IgG insreased significantly after taking LJD (from 109.56 ± 17.35 IU/ml to 127.44 ± 17.20 IU/ml $P < 0.05$) after three weeks training. The

blood SOD increased significantly after taking LJD for three weeks (from 72.17±17.92 μg/ml to 91.56±15.62 μg/ml $P<0.05$). Meanwhile, the sleep, appetite and recovery from fatique of walkers taking LJD was better than that of those taking GRJ.

The result of maximal steady state (MSS) load showed that after three weeks training with tonic agents being taken, the oxygen expenditure of athletes per minute decreased significantly in two groups, but the hearts rate recovery of one minute after MSS in the LJD group was faster than that in the GRJ group and blood lactic acid level in the LJD group was lower than in the GRJ group . The use of "Lao Jun Decoction" is helpful in recovering from fatigue and beneficial in maintaining the good physical condition and improvement of the performance capacity of athletes.
"Lao Jun Decoction" (LJD), also called "the Miraculous Life Lengthening Decoction" or "Bulao Porridge" is one of the traditional Chinese Long-Life diet series.

The purpose of the present study was to find the effect of LJD on the improvement of physical condition and increased performance of athletes.

Table 1. The effects of "Lao Jun Decoction" (LJD) use on serum immunoglobulin of walking athletes during the training period (IU/ml)

Group	Time	Case	IgG	IgA	IgM
LJD	before use	9	109.56±17.35*	105.67±25.95*	145.22±31.97
	after use	9	127.44±17.20**	100.56±19.46	151.78±16.54
GRJ (ctrl.)	before use	9	131.56±32.09	123.13±37.02	149.56±41.75
	after use	9	143.33±25.39	92.25±13.60**	143.11±21.09
Normal person		50	150.00±32.75	142.86±35.71	129.41±35.29
Marathoner		17	134.75±21.75	135.00±53.57	151.76↑154.12

**: comparison between before and after medicine use, $P< 0.05$
*: comparing with normal person, $P<0.05$

Table 2. The change of SOD in the blood before and after quatitative load and LJD use (μg/ml)

group	case	before medicine use		after medicine use	
		rest	after exercise	rest	after exercise
LJD	9	72.17±17.92	86.94±22.19	91.56±15.62*	95.28±14.00
GRJ (ctrl.)	9	82.67±16.36	78.00±12.66	86.00±13.65	93.08±20.26

*: comparing with the resting value before medicine use, $P<0.05$

Table 3. The effects of LJD use on subjective sensation of a walking athletes (%)

	case	GRJ group (control)		LJD group	
		good	bad	good	bad
appetite	9	72.8	27.2	93.8*	6.2
sleep	9	92.7	7.3	97.8	2.2
excitability in training	9	88.8	11.2	95.6	4.4
skill response	9	79.3	20.7	89.3	10.7
fatigue	9	71.3	28.7	82.1	17.9

*: comparing with the control, $P<0.05$

Table 4. Comparison of oxygen expenditure at the maximal steady status pace load before and after LJD use

group	case	before medicine use		after medicine use	
		absolute value (L/ml)	relative value (ml/kg.min)	absolute value (L/ml)	relative value (ml/kg.min)
LJD	9	3.11±0.63	52.40±9.57	2.69±0.67**	45.49±10.95
GRJ	9	3.14±0.40	53.17±7.52	2.75±0.34*	46.96±4.69 (ctrl.)

*: comparing with the absolute value before medicine use in control group, P<0.05

**: comparing with the absolute value before medicine use in LJD group, P<0.05

Table 5. The recovery of heart rate after exercise load at the maximal steady status (beat/min)

group	case	before medicine use			after medicine use		
		rest	1min after exercise	difference	rest	1min after exercise	difference
LJD	9	67.32 ±9.36	124.68 ±16.68	57.36 ±13.80	66.60 ±10.38	114.66 ±9.72	48.06* ±9.72
GRJ (ctrl.)	9	68.64 ±8.52	131.34 ±11.76	62.70 ±13.14	66.66 ±7.62	129.36 ±15.9	62.70 ±13.14

*: comparing with the value of the control group after medicine use, P<0.05

Table 6. The changes of blood lactic acid after quantitative aerobic exercise load (mmol/L)

group	case	before medicine use		after medicine use	
		rest	after exercise	rest	after exercise
LJD	9	0.90 ±0.67	3.17 ±1.97	1.03 ±0.26	2.83 ±1.57
GLJ (ctrl.)	9	0.83 ± 0.33	2.77 ±1.60	0.82 ±0.38	3.03 ±2.56

Conclusion

1. The serum immunoglobulin IgG, IgA, IgM values of walking athletes were 109.56±17.35, 105.67±25.95, 145.22±31.97 IU/ml, respectively which were lower than that of normal person in China.

The IgG of athletes, however, increased significantly after three weeks taking LJD (from 109.56±17.35 IU/ml to 127.44±17.20 IU/ml , $P<0.05$), but there was no change in IgG after taking GRJ.

2. The blood SOD increased significantly following LJD use (from 72.17±17.92 μg/ml to 91.5±15.62 μg/ml , $P<0.05$).

3. One-minute heart rate recovery after Maximal Steady Status load in LJD group was faster than that of GRJ group, and the blood lactic acid immediately after load showed a tendency to decrease.

In summary, the LJD use could improve the immune function and capacity to prevent diseases and accelerate recovery from fatigue. So it will be benificial to athletes.