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Effect of *Shenqi Fufang* (参芪复方) on Pathological Morphology and Serum Inflammatory Factors of Gastrocnemius in Type 2 Diabetic Rats

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ABSTRACT Objective To explore the effect of *Shenqi Fufang* (参芪复方, SF) on skeletal muscle damage of type 2 diabetes mellitus (T2DM) and its possible mechanism. **Methods** Eighteen rats with spontaneous type 2 diabetes mellitus (GK) were randomized into the model group, SF group and sitagliptin group with six rats in each group, and six more Wistar rats were selected as the control group. Each group was given high fat diet for 8 weeks to build T2DM model except for the control group. At the same time, the control group and the model group were given normal saline 5 ml/(kg · d) by gastric perfusion, the SF group was given SF extract 1.44 g/(kg · d) by gastric perfusion, and sitagliptin group was given sitagliptin phosphate suspension 16 ml/(kg · d) by gastric perfusion. Eight weeks later, the levels of serum insulin-like growth factor 1 (IGF-I), tumor necrosis factor- α (TNF- α) and interleukin-1 β (IL-1 β) were measured in each group, the gastrocnemius muscle was taken out to get the wet weight and observe the pathological changes, and the expression of p70s6k1 protein was detected. **Results** Compared with the control group, the wet weight of the gastrocnemius muscle, the serum IGF-I level and p70s6k1 protein expression in the model group significantly decreased ($P < 0.05$), while the levels of serum TNF- α and IL-1 β significantly increased ($P < 0.05$). Through pathological observation, there existed gastrocnemius muscle cells atrophy, a larger area of edema and interstitial lymphocyte infiltration. Compared with the model group, the wet weight of the gastrocnemius muscle, IGF-I content and p70s6k protein expression in the sitagliptin group and the SF group significantly increased, the contents of TNF- α and IL-1 β significantly decreased ($P < 0.05$), and there were no obvious muscle cell atrophy and edema, and also little inflammatory cell infiltration. There was no significant difference between the sitagliptin group and SF group ($P > 0.05$). **Conclusion** SF could reduce the diabetic skeletal muscle injury; the potential mechanism seems to reduce the inflammatory factor content, improve IGF-I resistance and maintain the skeletal muscle mass.

Keywords type 2 diabetes mellitus; skeletal muscle injury; *Shenqi Fufang* (参芪复方); inflammatory cytokine; insulin-like growth factor

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赵绍琴教授百年诞辰征文

已故赵绍琴教授是中国当代著名中医学家、中医教育家,其学术成就和临床水平享誉国内外,是北京中医药大学和当代中医界的一面旗帜。为迎接和纪念赵绍琴教授百年诞辰(2018-12-04),北京中医药大学特向海内外中医同仁征集学术论文及纪念文章,内容包括:1) 赵绍琴教授学术思想和临床经验的整理和应用研究;2) 临床运用赵绍琴教授学术经验和方药的治验报告;3) 赵绍琴教授百年诞辰纪念文章。

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