Effect of "Bu Yang Huan Wu Tang" to the Regeneration of the Sciatic Nerve After Transection
Wang Xiang Li, Yang Lin, Li Zhen Hua, Yin Qun Sheng, Wang Hong Yu
Department of Anatomy, Shan Dong Medical University, Jinan, 250012

The effect of "Bu Yang Huan Wu Tang" to the regeneration of peripheral nerve after transection was investigated. In this experiment 30 SD rats were chosen and divided randomly into Bu Yang Huan Wu Tang group (simplified as BYHWT group) and control group. Under anesthesia the animals were subjected to aseptic condition with their sciatic nerve exposed at posterior thigh. A segment of 3mm was resected under operation microscope and a silicon tube 10mm long with inner diameter 1.2mm was used to join the two cut ends. Between the cut ends a 6mm silicon tube cavity was left. After operation the control group was routinely reared. The BYHWT group was fed with Bu Yang Huan Wu Tang by intubation twice a day (4ml/kg) for 4 weeks. The conduction latent velocity in the regenerated nerve, CB-HRP retrograde tracing, regeneration nerve axon diameter, myelin sheath thickness, blood vascular surface area quantitative analysis of nerve trunk, ultra-structural changes etc. were determined at post-operation 2, 4, 16 weeks so as to observe the nerve regeneration process. The results were as follows: four weeks post-operation, in the two groups nerve conduction latent velocity could all be determined, BYHWT group was markedly higher than the control group (p<0.05). Distal to the bridging area, CB-HRP was infusion into sciatic nerve trunk or injected into the posterior group of leg muscle. After TMB histochemical color reaction it was found that in the anterior horn of lumbo-sacral spinal cord and corresponding spinal nerve ganglion enzyme-labeled cells could be seen. In the BYHWT group there were many labeled cells and the reaction product was very abundant. Diameter of regenerated axon and thickness of the myelin sheath were all greater than that of the control group. In post-operation 16 weeks BYHWT group the increased thickness of myelin sheath was more marked, and its lamination was clear, there were many axon like substance. To specially point out was that in the BYHWT group there was obvious increase in vascular supply in the nerve trunk, image quantitative analysis showed that there was nearly 9 times of the control group. In the axon the mitochondria were obviously more than that of the control group. The above results showed that Bu Yang Huan Wu Tang in one way might be able to promote growth of blood vessels in the regenerated axons and the development of myelin sheath, at the same time it also facilitated energy metabolism vigorously thus facilitated the structural repair and functional recovery of the injured nerve.