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What do we understand from clinical and mechanistic studies on acupuncture treatment for hypertension?

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Our clinical study show that low current and low frequency electroacupuncture at P5-6 (over-lying median nerve) and S36-37 (overlying deep peroneal nerve) reduces high blood pressure in a subset of patients (~70%) with mild to moderate hypertension. The effect is slow in on-set (4-8 weeks) but is long-lasting (1-2 months). Experimental studies have shown that EA inhibits cardiovascular sympathoexcitatory neurons through activation of neurons in the arcuate nucleus of the hypothalamus, ventrolateral periaqueductal gray (vlPAG) in the midbrain and nucleus raphe pallidus (NRP) in the medulla, which in turn, inhibits the activity of pre-motor sympathetic neurons in the rostral ventrolateral medulla (rVLM) to ultimately reduce blood pressure. Several neurotransmitters such as glutamate, acetylcholine, opioids, GABA, nociceptin, serotonin and endocannabinoids participate in the EA hypotensive response although their importance varies between nuclei. The long-lasting inhibition of EA is related to opioids and GABA in the rVLM, neural circuitry between the arcuate and vlPAG and prolongation of the increase in preproenkephalin mRNA and enkephalin expression in the rVLM and arcuate. The inhibition of sympathetic activity, renin, angiotensin and aldosterone may be quite important. Thus, a number of mechanisms underlying the actions and long-lasting effect of EA on cardiovascular function have been identified, but clearly further investigation is warranted.

Biography

Ling Cheng is the Vice Chief to the Department of Acupuncture in East Hospital at Shanghai Tongji University, China. She is currently the Deputy Head of Acupuncture-Moxibustion Group, Medical Association of Pudong New District, China.

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