Use of laser acupuncture (PLA) for low back pain (LBP)

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**Background & Hypothesis:** Laser emits the purest form of light energy known as photons. Photons, when applied to the acupoints, some of its light energy will be absorbed by the cells to have tissue healing effect. This paper presents some of the case studies showing the effect of painless laser acupuncture (PLA) on patients, who suffered from low back pain (LBP).

**Methods:** Space laser SpA (Model IR CEB/UP, 904 nm, 10 watts peak power, average energy delivered 0.3 J/cm² per minute) was used. Depth of penetration is about 40 mm. Thor Ltd (Model DD, 810 nm, 200mW, CW with output energy at 12 J/cm² per minute) was used. Depth of penetration is about 30 mm.

**Results:** A 36-year-old male, who had acute low back problem for over a week, was given 6 PLA treatment sessions over a period of 2 weeks at 3 sessions per week. Another 40-year-old female patient who had been diagnosed by a medical doctor with slipped disc was in pain despite 15 years of chiropractic treatment. She was given a course of 10 PLA treatments over a period of 4 weeks. A 38-year-old female, who suffered from chronic LBP for about 8 months, received a similar 6 PLA treatment sessions over 2 weeks. All patients were free of pain after the treatments.

**Discussion & Conclusion:** Laser produces a magnetic (YIN) and an electric (YANG) component which is perpendicular to each other and the characteristics fulfilled the principle of the classical acupuncture without the use of the needle and the Moxa roll. The benefits of PLA will be delineated in this presentation.

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Functional MRI results related with acupuncture

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Although acupuncture therapy has been used in the world for thousands of years, it's neural mechanisms have not been adequately understood. Functional magnetic resonance imaging (fMRI) encourages for learning to mechanisms underlying acupuncture therapy. fMRI depends on measurement of blood-oxygen-level in the brain tissue. It presents information about brain responses, such as activation and deactivation, to acupuncture stimulations in various regions. Studies of fMRI in acupuncture began at 1990s. Early studies were conducted to investigate whether specific acupoints can produce a distinct response in specific brain regions of healthy subjects. Recently, fMRI is used for observing effects of different acupuncture styles, therapy durations, deQi sensation, patient's expectation, sham acupuncture, placebo acupuncture and acupuncture in several diseases. This technology is ready to offer unique opportunities to show mystery of acupuncture based on evidence-based-medicine in the scientific world. Are we ready?

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