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Title: Painless Laser Acupuncture (PLA) for Quit Smoking

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Abstract:
Traditional Chinese Medicine (TCM) theory and practice in healthcare is based on the holistic concept of smooth energy flow. Energy in TCM is called Qi (pronounced as "chee"). The energy helps maintain the circulation of blood and other bodily processes. This efficient supply of consistent energy and good circulation helps support the body's homeostasis. In therapeutics, Low Level Laser energy can be transferred to the body (in this case the auricle) to activate or maintain homeostasis through specifically appropriate auricular sites. In this study, the principles of Painless Laser Acupuncture (PLA) for Quit Smoking technique, combined with the principles of TCM, not only helps smokers stop smoking but also restored their homeostasis and good health. By selecting the optimal Auricular and Body Acupuncture points and meridian channels, the applied laser energy dosages synergize the homeostatic hence healing process.

Keywords : Destress, Dependency, Craving, Anxiety and Health Restoration

Introduction:
The use of Needle Acupuncture (NA) to treat drug addiction and Opium smokers goes back to the 1970s. However, the use of cutting-edge laser technology - Low Level Laser Therapy (LLLT) modality is a new field in TCM. The special laser characteristics of power, wavelength, resonance, quantifiable dosages coupled with its unique monochromatic and coherence properties have made it the potent "Light Energy Medicine" to restore health. [1] Its efficacy would be greatly enhanced when the quantifiable energy dosage is transferred to the patient through the acupoints (hence optimizing the Qi) at the ear and the main meridian pathways. The success rate may be greater if the smoker is willing to change their lifestyle without the worry of cravings or any "cold-turkey" effects.

The World Health Organization (WHO) has accepted acupuncture since the late 1970s as a modality in medicine for pain and disease prevention. [2] Today the research into modalities of acupuncture has moved beyond needle acupuncture to LLLT applications. One organization conducting such research is the Medical University of Graz in Austria. Led by Prof Graz Litscher, his team integrates High-Tech Acupuncture and Laser Acupuncture research, in collaboration with centers worldwide such as in USA, China, Russia, Korea and others. [3]

This study is based on 180 patients who were "tired" of smoking and sought treatment at this laser centre in Singapore since 2013. The ages range from 30 to 50 years old which comprised 154 (85.55%) Males and 26 (14.44%) Females with most of them in middle and higher management position. They understood the hazards of smoking and wanted a healthier lifestyle. There were a few dropouts due to their work commitment and travel schedules. Although most smokers wanted to quit smoking earlier, the thought of cravings, withdrawals and needle phobia was a deterrent to cessation. Also, alternative therapies like acupuncture, auriculotherapy and PLA are still not as well publicized as compared to pharmacotherapy such as nicotine patches and chewing gum therapy. This PLA holistic approach uses more acupuncture points to support better outcomes hence deliver higher efficacy. PLA eliminated the fear of needles, allowing better compliance, therefore yielding better results.

Method:
In the PLA technique, we selected the combination of auricular and body points for treatment consecutively as shown by the tables below. The 'RJ' Physiolaser system [4]. with two probes were used to provide for one course of treatment, which consisted of 7 sessions over a period of 3 weeks.

The first week was the most critical period, with 3 treatments dispensed consecutively for 3 days and 1 session before the end of the first week. The second week consisted of two sessions, and the last session on the third week. The auricular points used are shown on Table 1 and 1A below:

Probe 'A' had a visible wavelength of 638 nm/150 mW with a Duty-cycle of 85 percent. It was used to treat the superficial auricular points, with each point receiving a dosage of 3.5 Joules/cm^2. Total energy applied to the 10 Auricular points was 35.0 Joules/cm^2 for 5 min, with some energy loss of approximately 3.2 Joules/cm^2 due to time lost when moving the probe in between each acupuncture point. If the client was right-handed, the left ear was treated and vice-versa.

Similarly, the body points used were shown on Table 2. Probe 'B' which had a wavelength of 810nm/300 mW with Duty-cycle of 80 percent was used. Each point was treated with a dosage of 7.5 Joules/cm^2. The total energy applied to the 18 points was 135 Joules/cm2 for 10 mins, with some energy loss of approximately 9 Joules/cm2 due to time lag between acupuncture points .

Material :

The 'RJ' Physiolaser Olympic system was used with two probes:
Probe A – 638 nm/150 mW with 85 percent, delivered 38.2 Joules/cm^2 for 5 mins.
Probe B – 810 nm/300 mW with Duty-cycle of 80 percent, delivered 144Joules/cm^2 for 10 mins.
The combined total energy dosages delivered for treatment per session was 170 Joules/cm^2.
The clients were executives in their early 30 to 50 years of age, who were highly motivated and stressed individuals due to the nature of their jobs. Most smoked one pack of cigarettes per day (20 cigarettes), with a few smoking more than one pack per day.

Results:

In general, patients did not feel physically different after the first session, but upon smoking the first cigarette post therapy, the feedback was that they no longer "enjoyed" its taste as much as before. By the second session, the patients' craving had reduced and they smoked less. After the third session, most reported that they no longer finished each cigarette as the taste was awful. After completing the fourth session, those who were genuine about quitting smoking did not smoke at all. A few continued smoking one cigarette a day out of habit, but did not enjoy smoking as much as before. More than 80% provided feedback that they no longer had the urge to smoke. The Reward Pathway of Laser Acupuncture and its feedback mechanism are shown in Table 3.

Discussion:

Needle and LLLT acupuncture modulates the psycho-neuro-endocrine-immunological (PNEI) communications between the brain and body. These pathways involve the brain's limbic system or emotional reward or "feel good" centre The limbic system is involved in the placebo effect however the effects of needle and laser acupuncture have been shown to be greater than placebo. [5-9]. By introducing PLA to the smokers, the LLLT helps to maintain the efficiency of these PNEI communications and their associated neurotransmitters during the smoking reduction phase with the depletion of these neurotransmitters. In particular, it can be "fast tracked" with auricular points which access the higher and mid brain centres (including the limbic systems) through the auricular branches of Cranial Nerves 5 and 10 also known as the Trigeminal and Vagus nerves respectively [10,11] and the superior cervical plexus which has a direct link to restfulness and sleep management at the supraoptic chiasma. [12-13] With this support of stable brain and body interactions the withdrawal effects from nicotine cessation is minimized.
It was noted that some smokers with a smoking history of more than 15 years could not finish three puffs of a cigarette after three sessions of therapy. The feedback from the smokers was that the treatment was effective as it overcame their dependency on nicotine. Their cravings had been reduced tremendously or no longer existed. (Table 4). With more clinical studies to investigate this auricular laser modality, it will greatly benefit public health with the reduction of smoking related health risks and disorders. It is the Prime Minister of Singapore, Mr Lee Hsien Loong's vision to make "Singapore a Smoke Free Nation".

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Conclusion:

The Painless Laser Acupuncture approach when integrated with the Traditional Chinese Medicine principles of acupuncture, increases treatment efficacy for cessation of smoking and restoring the health of smokers. The treatment was comfortable, painless and the protocol regime was easy to comply with. Being pain free and with ease of application, it is an ideal protocol to be recommended to smokers for combating their addiction.

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Table 1

For Auricular Points: Probe A was used for 5 mins @ 3.5Joules/pt

Ear Points	Shenmen	Heart	Lung	Endocrine	Brain	Stomach	Kidney	Adrenal	Liver	Finger

TABLE 1A - RIGHT EAR

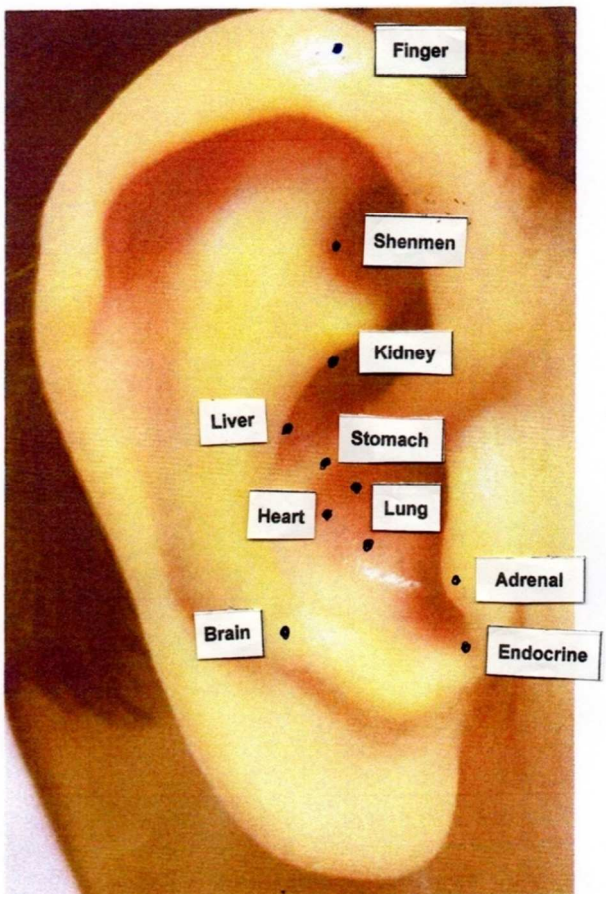

Table 2:

For Body Points: Probe B was used and Time: 10 mins @ 7.5 Joules/pt

Body Point	Heart	Lung	Kidney	Spleen	Liver	LI	Ren	Du	Stomach	Pericardium
	H 3&7	LU 5&6	K 3&10	SP 6&9	LIV 3&8	LI 4&11	R 23	DU 20	ST 37&40	P 3&6

Table 3:

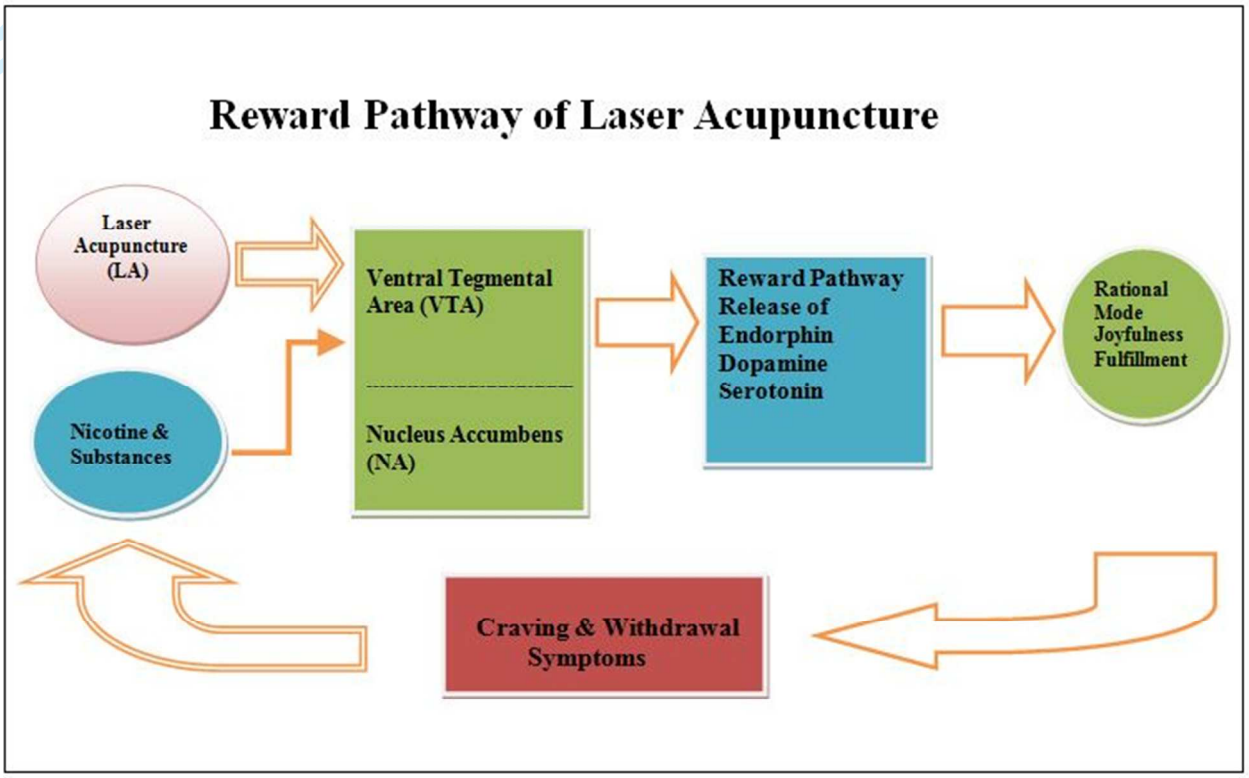

Table 4: Overall Feedback and Responses: After completing the 4th treatment.

Feedback	Taste of Cigarette	Craving	Body Status	Sleep	Food	Body Smell	Stress	Mental	Well Being
Response	Tasteless	No Urge	Full Energy	Deep	Taste Good	No smell	Relax	Alert	Good