Rejuvenation of cupping therapy as a holistic healing practice

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Complementary and Alternative Medicine (CAM) is well recognized across the world and within every culture. CAM is an umbrella term that encompasses a vast array of treatment options supplementing conventional therapies to ease a plethora of symptoms. As this therapy provides a platform which plays paramount role in welfare of human health, it has become essential to explore its scientific and biomedical scope. Cupping therapy constitutes one of the CAM therapies, known to carry a remarkable potential in various maladies. It is practiced with round glass cups that are shaped like glass balls with an opening at one end. This treatment involves placing heated glass cups on painful body parts to generate a partial vacuum that mobilizes the blood flow and promotes effective healing. This therapy is believed to act by correcting imbalances in the internal bio-field such as restoring the flow of ‘qi’. Since these traditional cups do not allow the complete remedy, a modern technology of pulsatile cupping and silicone cups has been developed to provide the comprehensive cupping of big joints along with flexibility in therapy. Cupping refers to the simple application of quick, vigorous, rhythmical strokes to stimulate muscles and is particularly helpful in the treatment of limbs, head, neck, shoulders or back pains. Thus, cupping carries the potential to enhance the quality of life. Understanding the existing mechanisms and pharmacological actions of cupping therapy will certainly aid in rejuvenating its relevance in the current medical scenario.

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Methylphenidate modulates dorsal raphe neuronal activity: Behavioral and neuronal recordings from adolescent rats

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Methylphenidate (MPD) is one of the most widely prescribed psycho-stimulants for the treatment of Attention Deficit Hyperactive Disorder (ADHD) in children and adults. MPD binds to presynaptic catecholamine transporters in the CNS and prevents reuptake of norepinephrine and dopamine from the synaptic cleft. Unlike the psycho-stimulants cocaine and amphetamine, MPD does not exhibit direct actions on the serotonin transporter. Studies investigating MPD tend to focus on its effects on the CNS dopamine circuit, however there is evidence suggesting that MPD affects the serotonergic system as well. This study aimed to investigate the role of the dorsal raphe, a major source of serotonergic innervation in the mammalian brain, in the response to acute and chronic MPD exposure. The hypothesis of the study is (1) the dorsal raphe (DR) participates in MPD action, (2) the same chronic MPD dose in some adolescent animals will elicit behavioral sensitization and in others behavioral tolerance, and (3) the DR neuronal activity recorded from adolescent animals expressing behavioral sensitization to chronic MPD exposure will have a significantly different response to MPD re-challenge than those DR neurons recorded from animals expressing behavioral tolerance to chronic MPD. The animals received daily MPD or saline injections on experimental days 1-6, followed by 3 washout days and MPD re-challenge dose on Experimental Day (ED) 10. The same chronic dose of MPD resulted in either behavioral sensitization or tolerance. DR neurons responded to acute MPD in a dose dependent manner. Neuronal activity recorded from the DR units of rats expressing behavioral sensitization to chronic MPD exposure exhibited a significantly (p<0.05) different response to MPD re-challenge on ED10 compared to the DR neuronal activity recorded from animals that expressed behavioral tolerance to chronic MPD. This correlation between behavioral response and DR neuronal activity following chronic MPD exposure indicates that the DR is involved at least in part in the acute effects of MPD as well as the chronic effects of MPD (expression of sensitization and tolerance) in adolescent rats. The study confirms our hypothesis.

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