CLINICAL VIGNETTE

Acupuncture for Smoking Cessation

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Introduction

Nicotine dependence continues to be a major public health concern in the United States, with approximately 28.3 million US adults currently smoking cigarettes. 480,000 Americans annually die from cigarette smoking, with costs exceeding $600 billion in 2018. These include $240 billion in healthcare spending and nearly $372 billion in lost productivity.[1] Due to the highly addictive profile of the chemicals contained in cigarettes, many find it difficult to quit smoking despite the well-documented health risks associated with tobacco use including lung and heart diseases, and increased cancer risk.

Western Medicine has developed significant interventions aimed at smoking cessation. These range from pharmacological therapies to psychological interventions such as cognitive behavioral therapy or motivational interviewing.[2] However, the journey towards smoking cessation is often marked by multiple attempts to quit with frequent relapses, and traditional interventions to quit may not be sufficient to quit entirely. The challenges of smoking cessation are multiple and warrant more comprehensive management plans.

Acupuncture has been evaluated as a potential complementary and alternative therapy for various health conditions, including smoking cessation. This treatment modality has been suggested to help reduce cravings, promote relaxation, and decrease nicotine withdrawal symptoms, to support the smoking cessation process. However, there is limited evidence supporting acupuncture as an effective intervention for smoking cessation, with diverse outcomes across studies. Despite these uncertainties, the use of acupuncture is often considered due to the favorable safety profile and holistic approach.

This case adds to the evolving discourse on acupunctures effectiveness for smoking cessation. We present a detailed analysis of a patient who used acupuncture as a primary intervention to quit smoking. He hoped to enrich the exploration of effective and holistic approaches to smoking cessation.

Case Presentation

A 67-year-old male presented to the East-West Medicine Clinic seeking intervention for nicotine dependence. His smoking history spanned over four decades, with two prior cessation attempts in 1988 and 2010, each lasting about a year. The initial relapse in 1988 occurred after the birth of his first child, triggered by a friend's offer of a cigar. The 2010 relapse was attributed to the initiation of regular evening wine which intensified his smoking cravings. At presentation, he was consuming 15-20 cigarettes daily, accompanied by daily intake of 2-3 glasses of wine during dinner.

Interestingly, he had not previously sought pharmacological intervention for nicotine dependence. His motivation to quit, rated at 7 out of 10, was predominantly driven by the desire to prevent second-hand smoke exposure to his grandson. At presentation he reported a persistent dry cough, decreased libido, erectile dysfunction, and anxiety exacerbated during craving episodes. His GAD score was a minimal 3, with a PHQ9 score of zero, indicating no depressive symptoms. He reported a reduced smoking frequency during busy periods and found solace and distraction from cravings with gardening. Financial stress and retirement-induced boredom emerged as significant triggers.

His visit was motivated by interest in alternative cessation methods. While acupuncture emerged as the primary choice, the clinic proposed a comprehensive plan including pharmacotherapy and counseling. However, the patient expressed a clear preference to solely rely on acupuncture. The patient was counseled regarding the reduced likelihood of complete cessation given less frequent visits and refusal of adjunct therapies, and he verbally expressed understanding. Detailed discussions revolved around addiction behavior, potential strategies to sidestep triggers, plans for cessation and maintaining motivation.

Over four months, the patient underwent six acupuncture sessions targeting the following acupuncture points: Yintang, Du 20, Lu9, Kd3, St 36, Li4, Lv3, following the National Acupuncture Detoxification Association (NADA) protocol points. By the second session, his daily smoking had reduced from 18-20 cigarettes to 2-6 cigarettes. Despite this progress, complete cessation remained elusive due to persistent triggers, specifically his evening wine ritual and rainy days which restricted his gardening activities. Furthermore, his reluctance to discard his ashtray and cigarettes illustrated an underlying ambivalence.

During the concluding session, while expressing gratitude for the noticeable reduction in his smoking habit attributed to acupuncture, he acknowledged lack of full commitment to cessation. He remained open to the idea of revisiting the clinic and possibly integrating Western modalities, such as pharmaco-

therapy and counseling, in his future attempts at smoking cessation.

Discussion

Tobacco use, particularly cigarette smoking, remains a leading cause of preventable disease and death in the United States.[3] Despite efforts to curb tobacco use, a significant portion of the population continues to smoke. The CDC reports that nearly 7 out of 10 smokers want to stop smoking, with many having made at least one past attempt to quit. However, only a small fraction succeeds without external assistance.[1] This underscores the necessity for effective smoking cessation interventions. Studies report that nicotine replacement therapy (NRT) can double the chances of successful smoking cessation compared to placebo treatments.[4] Similarly, high quality evidence shows behavioral counseling increases the likelihood of quitting smoking.[5]

Despite these advances in Western Medicine, pharmacotherapy and behavioral counseling sometimes fall short in addressing the multifaceted nature of nicotine addiction.[6] This observation has led to the exploration of complementary therapies, such as acupuncture. In fact, the NADA protocol has been widely used to treat substance abuse since the 1970s.[7] A growing body of evidence suggests potential benefits of acupuncture in supporting smoking cessation efforts. One randomized controlled trial investigated the effectiveness of auricular acupuncture in smoking cessation compared to a control group receiving sham acupuncture. Both groups also underwent counseling and nicotine replacement therapy. The study reported cigarette consumption significantly decreased in both groups, but only the treatment group showed a significant decrease in the nicotine withdrawal score compared to the sham acupuncture group.[8] Another placebo-controlled study included 80 severe relapsing alcoholics who received NADA protocol for treatment of substance abuse (treatment group) or at nonspecific points (control group). The control group reported more than twice the number of drinking episodes compared to the treatment group who received NADA acupuncture. The control group also had twice the readmissions during the follow-up period.[9]

In 1832, Friedrich Arnold, a German professor, reported that stimulating the external ear canal can induce a cough similar to the reflex induced by the vagal nerve. It is theorized that auricular acupuncture operates through the stimulation of the Auricular Branch of the Vagus Nerve (ABVN). This branch has intricate connections with the autonomic nervous system (ANS) via the nucleus of the solitary tract (NTS) in the brain. When stimulated, the ABVN can influence various reflexes and organ functions mediated by the NTS, affecting the cardiovascular, respiratory, gastrointestinal, and endocrine systems.[10]

Ongoing research investigating potential mechanisms behind auricular acupuncture's effectiveness. Studies have linked acupuncture to the production of endogenous peptides, such as beta endorphins and metenkephalins. Acupuncture has also been associated with changes in other neurotransmitters including adrenocorticotrophic hormone, cortisone, serotonin, norepinephrine, and dopamine levels. Neuroanatomically, the ear is the elastic plate of connective tissue supplied by various cranial and spinal nerves.[11]

The case presented here serves as an illustrative example, highlighting the potential effectiveness of acupuncture, specifically the NADA protocol, in reducing smoking frequency when paired with Western methodologies. The NADA protocol, specifically used in this case, was originally developed in the context of addiction treatment. It involves the insertion of needles at five specific ear acupuncture points – points associated with the lung, liver, kidney, sympathetic nervous system, and shen men – which correspond to key organs and systems in Chinese medicine associated with addiction. This protocol is purported to promote calmness, balance, and detoxification, which in the context of smoking cessation, may translate to reduced cravings, decreased withdrawal symptoms like irritability, anxiety, reduced concentration, and increased appetite.[12] By focusing on detoxification and balance, acupuncture utilizing the NADA protocol may serve as a crucial tool in overcoming barriers to successful cessation, making the journey to quit smoking more tolerable.

Conclusion

The multifaceted nature of nicotine addiction would benefit from a comprehensive approach for more effective smoking cessation. While pharmacotherapy addresses neurochemical imbalances, and behavioral counseling helps individuals develop coping strategies, acupuncture may fill a gap by potentially modulating the stress response, mitigating withdrawal symptoms including anxiety, and promoting relaxation. The success observed in our patient's significant reduction in daily cigarette smoking over a short series of office visits highlights the potential of providing further benefit to patients who are trying to quit smoking using acupuncture. Therefore, the combination of acupuncture and western treatment modalities may offer a more effective approach to smoking cessation by targeting the multifaceted nature of nicotine addiction. Large scale-controlled studies are warranted to further evaluate the statements made in this clinical vignette.

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