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Research Article

INTEGRATING AYURVEDA INTO ADDICTION MEDICINE: A PILOT TRIAL OF *KSHEERBALA TAILA NASYA* FOR NICOTINE DE-ADDICTION

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ABSTRACT

Commonly found in tobacco derivatives, nicotine is one of the most common forms of addiction in today's world. With growing dependency on nicotine irrespective of gender or standard of living humans are exposed towards basic to most fatal diseases. According to WHO- global health report, one-fourth (24.9%) of the population including both sexes are nicotine dependent, 40.3% men and 9.5% women. Although there have been many attempts on nicotine de-addiction trials most have failed or relapsed. In this study 10 nicotine dependent individuals were randomly selected from OPD. They were given *Nasya* therapy with *Ksheerbala* oil (10 drops each nostril) followed by *Tikshna Snaihika Dhumapana* after *Mukha Abhyanga* with *Tila taila* and *Vastra Swedana* for a period of 7 days in indoor department with *Pratimarsha Nasya* (2 drops each nostril) of same oil in the next 7 days. All the 10 cases showed marked decrease in nicotine dependence with highly significant p-value of 0.0019. Nicotine being highly addictive is an anxiolytic drug affecting synaptic junctions of central nervous system. *Nasya* one of the five *Karmas* of *Panchakarma*, is a simple procedure that can be done on OPD basis giving admirable results in de-addiction.

INTRODUCTION

Dependence is defined as a cluster of behavioural, cognitive, and physiological phenomena that develop after repeated substance use, typically including a strong desire to take the drug, difficulties in controlling its use, persistence in use despite harmful consequences.[1] Nicotine is an alkaloid naturally found in tobacco leaves (*Nicotina tabaccum*) and the principle psychoactive component behind tobacco addiction. Despite widespread awareness of its risks, tobacco use continues to be prevalent, driven largely by the addictive properties of nicotine. The complexity of nicotine dependence lies in its multifaceted nature, encompassing biological, psychological, and social components.

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Nicotine dependence is considered as a neurobiological adaptation on repeated drug use and can be considered under both physical as well as psychological dependence. Traditional cigarette smoking might be commonest form of use but nicotine can also be delivered via other tobacco products such as chewing tobacco, snuffs, pipe tobacco, hookah, all of which can produce nicotine dependence i.e., nicotine dependence can occur from both smoke or smokeless tobacco use.

Estimates indicate that over 500 million individuals worldwide are living with nicotine dependence, affecting nearly half of daily smokers. This condition is particularly prevalent in low and middle-income countries, where tobacco use is more common[2]. In 2020, approximately 22.3% of the global population used tobacco products, with a higher prevalence among men (36.7%) compared to women (7.8%).[3] Regarding smokeless tobacco (SLT), more than 360 million people worldwide consume SLT products, with over 90% residing in low- and middle-income countries, particularly in South Asia. [4]

Although nicotine itself is not responsible in causing cancer but its highly addictive nature makes tobacco products very difficult to be given up even though there are fatal health issues associated. There have been several measures taken to prevent or stop use but most have either failed or resulted in relapse, this case series here aims at evaluating effect of *Nasya*[5] one of the five prime modalities of *Panchakarma* in nicotine dependence. 10 subjects from different backgrounds were selected and subjected to *Nasya karma* [nasal instillation of medicated drug] and evaluated for effect on nicotine dependence. This study aims at setting up a cost-effective beneficial therapeutic measure towards reduction of nicotine dependence with the help of Ayurveda.

METHODOLOGY

Study size: 10 apparently healthy nicotine dependent individuals were taken irrespective of gender and socio-economic status (4 female and 6 male) after thorough examination and history taking [individuals without any diagnosed mortality factors were selected].

Table 1

S.No	Name	Age	Sex	Form of Tobacco used	Socio Economic Status
1	LB	40	M	SLT	MC
2	NB	63	M	S	LMC
3	LH	45	F	SLT	LMC
4	SD	60	M	SLT	LMC
5	TB	60	F	SLT	MC
6	OA	65	M	SLT	LMC
7	DC	65	M	S	MC
8	RB	38	F	SLT	MC
9	SB	57	F	SLT	LMC
10	AH	55	M	S	MC

Study design: Interventional Clinical Trial Case Series

Place of study: Institute of Post Graduate Ayurvedic Education and Research at S.V.S.P Hospital, Kolkata, West Bengal.

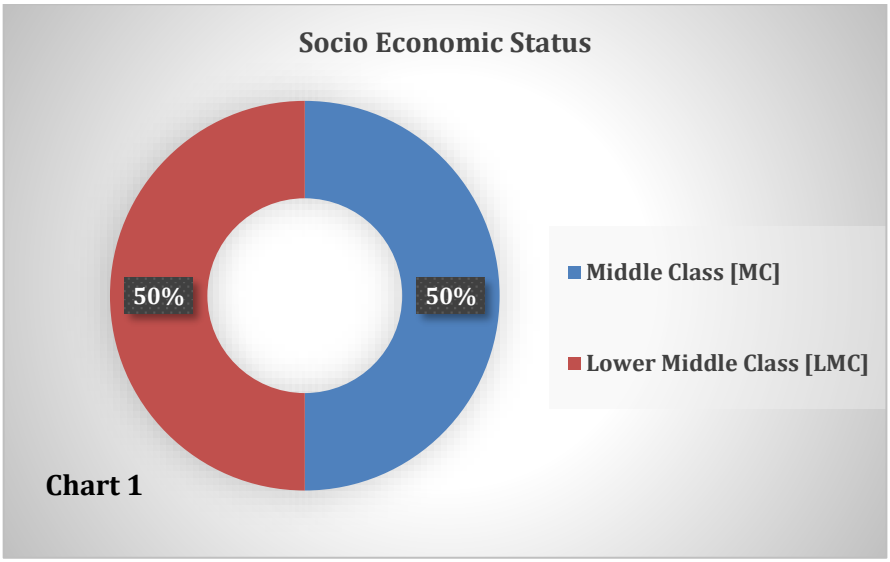
Procedure: 10 drops[6] of *Ksheerbala Taila* [7] *Nasya* was done followed by *Dhumpana* [medicated smoke inhalation] for a period of 7 days [8] and 2 drops [9] for the next 7days. Process followed is given below:

Table 2

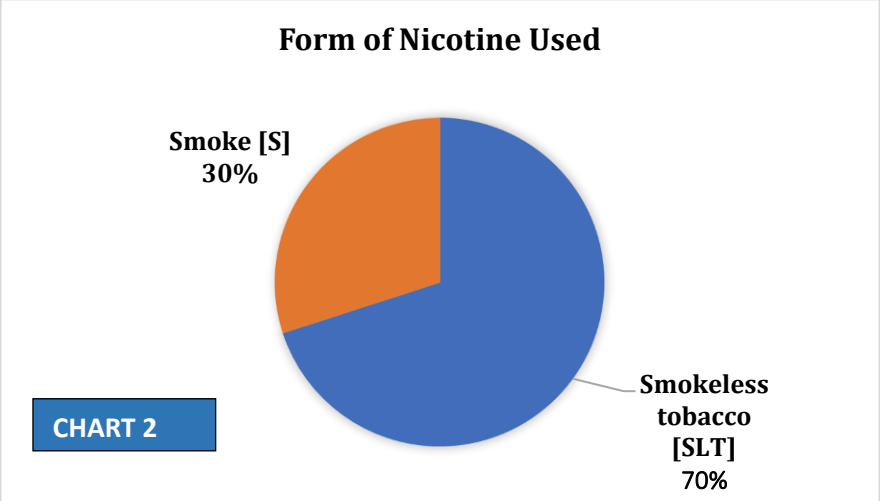
Steps	Procedure [10]
Purvakarma	Complete *Mukha Abhyanga* [facial massage] with *Tila taila* was done followed by *Vastra Swedana* [cloth fomentation] for 5-6 minutes each on an empty stomach.
Pradhan Karma	10 drops of *Ksheerbala taila* was instilled into each nostril. Any accumulation of fluid in oral cavity during the procedure, was asked to be spat outside.
Paschat Karma	*Mukha Abhyanga* and *Swedana* were repeated and patient was asked to rest in a well-ventilated space away from direct wind, thereafter *Dhumapana* (medicated smoke inhalation)[11] was done with *Tikshna snaihika Dhum*a followed by lukewarm water *Kavala* [12] (oil pulling).

RESULTS AND OBSERVATIONS

Nicotine dependence is prevalent in all stratas of the society irrespective of socio-economic status with clear depiction in our study represented in chart 1.



It has been also observed that nicotine dependence is not restricted to a single form of tobacco used but both smoke and smokeless tobacco are equally responsible for causing dependence as per chart 2.



Each case shows decrease in the frequency of tobacco consumption, with higher improvement in cases with shorter span of dependence. There was gradual decrease in craving in most cases with few reducing to complete withdrawal by first follow up (after 15 days) as shown in Table 3 with a graphical representation in chart 3.

Table 3

S.No	Day 0 (frequency of use/day)	Day 7	Day 15
1	4	2	0
2	8	6	3
3	5	3	1
4	3	2	0
5	5	3	1
6	2	0	0
7	4	0	0
8	6	3	1
9	12	7	3
10	3	1	1

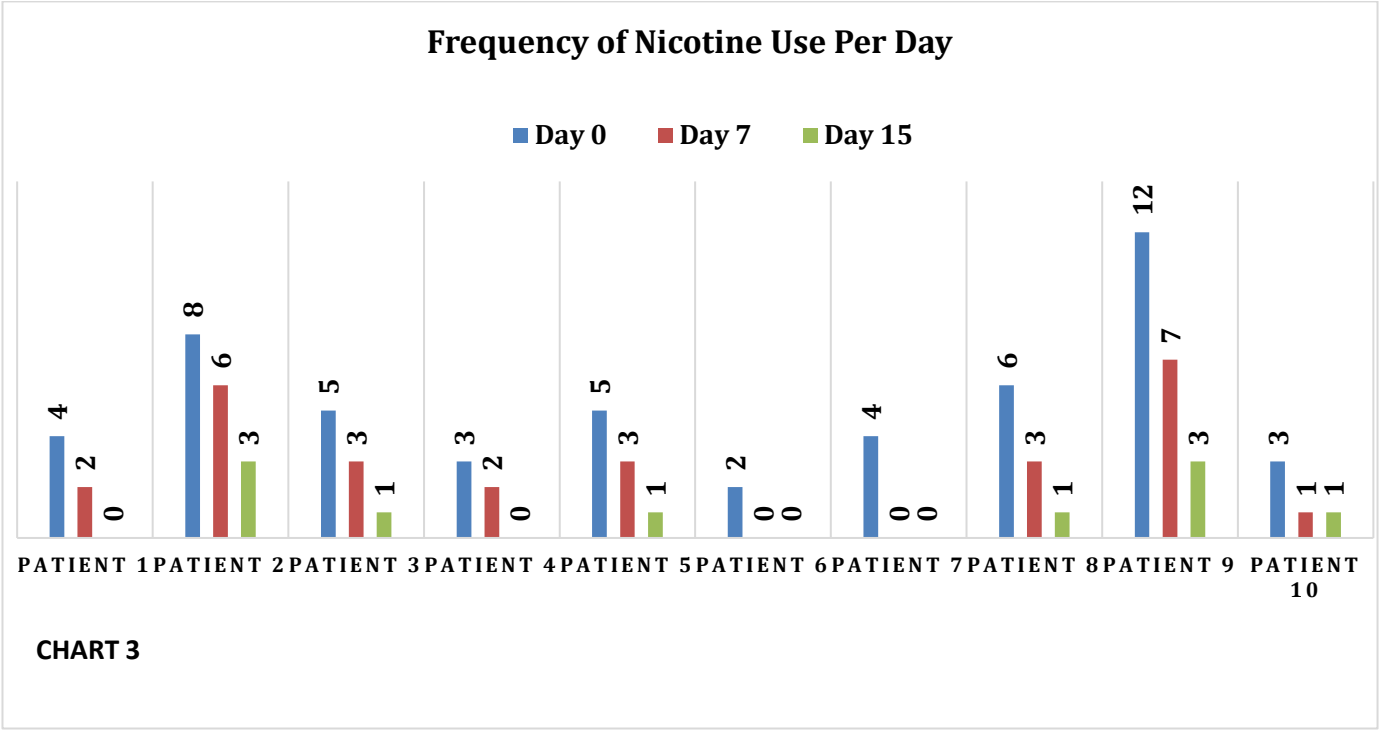


CHART 3

All the 10 cases showed marked decrease in nicotine dependence with highly significant p-value of 0.0019.

DISCUSSION

Nicotine is a parasympathetic stimulant that activates nicotine-bound acetylcholine receptors which in turn results in release of dopamine and other neuro receptors in the brain, thereby creating a pleasurable response. Over time, the number of nicotine receptors in the brain increases with increasing dependency and change in the brain's anatomy.

As per Ayurvedic perspective the increase in receptors and conduction can be explained as increase of *Vayu Dosha* (air component). As mentioned in the classical texts *Vayu* is one of the three *Doshas* that is *Vata, Pitta* and *Kapha* that help sustain the body. The *Gunas* [properties] of *Vayu* are described as *Laghu* [lightness], *Ruksha* [dryness], *Sukshma* [penetrating], *Khara* [rough], *Chala* [mobile]**.** These described properties on regular intake of nicotine get aggravated, there-by increasing abnormal functioning and resulting in dependence. This in turn results in various *Mano vikaras* [diseases of mind] such as anxiety, irritability, frustration, indecisiveness making individuals prone to re-intake of nicotine and the cycle thus keeps repeating.

Use of *Ksheerbala taila* in the form of *Nasya*, which is considered the best treatment modality for *Urdhwajatrugata Rogas* as per *Acharyas*. *Taila* [oil] helps in the mitigation of *Vata Dosha* without affecting *Kapha. Ksheerbala Taila* composed of *Bala (Sida cordifolia), Tila Taila* (sesame oil) and *Go-Ksheer* (cow milk) provide *Indriya prasadana* [nourishment to all sense organs], *Balya* [strength building] and *Rasayana* and helps mitigate *Vayu Dosha*.

Tikshna dhumapana helps in expulsion of deposited *Kapha*, reducing craving and improving overall mental wellbeing.

The present study shows a highly significant p- value of 0.0019 which proves the efficacy of *Nasya* with *Ksheerbala* oil in reduction of Nicotine dependence along with the after math of withdrawal symptoms, if any faced by the patients. The procedure of *Nasya* with *Ksheerbala Taila* has also focused and caused significant improvement of *Mano-vikara* resulted from dependence in the long term.

The study is based on a small number of cases and can be continued in larger group for further detailed significant study.

CONCLUSION

Nasya [nasal instillation] shows significant results in patients with shorter span of dependency compared to individuals to ones with longer time period of dependency.

Further in-depth study shall help to find out specific benefits as well as mode of action of *Nasya* in de-addiction. *Nasya* as viewed in the given study also can be used as a great therapeutic measure for nicotine related mental disorders which are highly common in individuals with longer span of dependency.

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