

# Oral Physician in Tobacco Cessation: Review Article

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**Abstract:** Introduction: Tobacco is the single most important avoidable cause of premature morbidity and mortality in the world. Tobacco dependence is a chronic condition that often requires repeated interventions. Since oral medicine experts are the first to note any changes that can occur in the oral cavity, they can play a major role in its prevention and intervention. There are well-tried and cost-effective methods for interventions. An oral medicine expert can play an effective role in tailoring a special and specific cessation programme for every individual to improve quit rate and prevent relapse. Objective: This review is prepared with the objective to help Oral Medicine Experts to guide differential prescribing practices and tailoring pharmacotherapy for tobacco cessation. Conclusion: Interventions by Oral Medicine Experts have been found to be effective in helping people to quit tobacco.

**Keywords:** Tobacco dependence, tobacco cessation, oral medicine expert, nicotine placement therapy

## 1. Introduction

Tobacco is the single most important avoidable cause of premature morbidity and mortality in the world. The World Health Organization (WHO) has estimated that there are about 1100million smokers worldwide, which represents about one-third of the global population aged over 15 years. About 73% of smokers are in developing countries, and in industrialized countries there are about 200 million male smokers and 100 million female smokers. In the 15-year-old population of developing countries, it is estimated that about 48% of males and 7% of females are smokers.<sup>1</sup>

In India, tobacco consumption is responsible for half of all the cancers in men and one fourth of all cancers in women.<sup>2</sup> India also has one of the highest rates of oral cancer in the world, partly attributed to the high prevalence of tobacco chewing.<sup>3-6</sup>

The Global Adult Tobacco Survey (2016-17) estimated that 28.6% of adults aged 15 and above (26.7crore) use tobacco in some form. 19.9 crore adults in rural areas and 6.8 crore adults in urban areas use tobacco.<sup>7</sup>

### Tobacco and Mortality

Most malignancies of the upper aero digestive tract are squamous cell carcinomas (SCC) arising in the mucous membrane of the mouth, pharynx, and larynx and share common risk factors.<sup>8</sup>

For both genders combined, cancer of the mouth andpharynx ranks sixth overall in the world, behind lung, stomach, breast, colon and rectum, and cervix plus corpus uteri. Mouth and pharynx are third most common site for males in developing countries and fourth among females. The highest rates in the world for oral cancer are found in France, the Indian subcontinent, Brazil, and central/eastern Europe.

### Tobacco Cessation Practices

The tobacco use exerts detrimental effects on dental treatment and oral health. Various dental organizations around the world have recommended the cessation of tobacco use. At a global level, an advocacy guide for oral health professionals included smoking cessation practice (FDI/WHO, 2005).<sup>9</sup>

There are two types of modalities for tobacco cessation:

- 1) Non-Pharmacotherapy
- 2) Pharmacotherapy
  - Nicotine Replacement Therapy (NRT)
  - Non-Nicotine Replacement therapy
  - Nicotine vaccine

### Non-Pharmacotherapy

#### The 5 “A” S, 5“R” S & 5 “D”S

The Five A’s (Ask, Advise, Assess, Assist and Arrange), Five R’s (Relevance, Risk, Rewards, Repetitions, Roadblocks) and five ‘D’s (Delay, Distract yourself, Drink water, Deep breath, Discuss your feelings) is a five to fifteen minute research based counseling approach that has proven global success (Table 1).<sup>10-11</sup>

**Table 1**

5“A”	5“R”	5“D”
Ask	Relevance	Delay
Advise	Risks	Distract yourself

Assess	Rewards	Drink water
Assist	Road block	Deep breath
Arrange	Repetition	Discuss Your Feelings

### Pharmacotherapy<sup>12</sup>

Medications are important and effective tools for increasing cessation success by relieving nicotine craving and

withdrawal symptoms. There are currently seven FDA-approved tobacco cessation medications available that increase long-term tobacco use quit rates. These treatments are listed in the chart below and are available either by prescription or over-the-counter (OTC).

**Table 2:** Therapy recommended for quitting tobacco depending on level of addiction<sup>13</sup>

Level of Addiction	Recommended Therapy
Light Addiction	Behavioral Intervention/ NRT
Moderate Addiction	Behavioral Intervention/NRT/ Pharmacological Therapy
Serious Addiction	Behavioral Intervention/ NRT/ Pharmacological therapy/ Professional and Intensive

**Assessment of level of addiction<sup>14</sup>**

**Qualitative methods:** The simplest approach to measuring dependence on cigarettes is a basic qualitative approach that

uses questions to find out whether the smoker has difficulty in refraining from smoking in circumstances when he or she would normally smoke or whether the smoker has made a serious attempt to stop in the past but failed.

**Quantitative methods:** The most commonly used quantitative measure of dependence is the Fagerstrom test fornicotine dependence, which has proved successful in predicting the outcome of attempts to stop. The higher the score on this questionnaire, the higher the level of dependence: smokers in the general population score an average of about 4 on this scale.

**Objective methods:** The concentration of nicotine or its metabolite, cotinine, in blood, urine, or saliva is often used in research as an objective index of dependence because it provides an accurate measure of the quantity of nicotine consumed, which is itself a marker of dependence.

**Table 3:** Pharmacotherapy for tobacco cessation<sup>15</sup>

Drug	Dose	Side effect/ Drug interactions	Comments
NRT: sustained release Nicotine Transdermal patch (Nicodem CQ)	20 cigarettes/day: 1 patch (21mg/24h) for 4-6 weeks, then taper to 14mg/day for 2-4weeks, then 7mg per day for 2-4weeks If patient has cardiovascular disease, weighs less than 45kg or smokes, K pack/day begin with 14mg/24h 66 weeks then Q to 7mg/ 24h 62weeks NB:16-h patches are available in some countries	Side effects: Skin sensitivity and irritation (most common); nausea, dyspepsia	Start patch on quit date. Advice not to smoke cigarettes while using the patch, though this is generally safe and does not indicate treatment failure. Educate users on the signs and symptoms of nicotine toxicity
NRT: Immediate release Nicotine inhaler (Nicorette)	Available in 4mg strength. Encourage patient to use atleast six doses/day for thefirst3-6 weeks. Max12/day. Tapering: gradual reduction in use over next 6-12 weeks, stopping when reduced to 1-2/day	Side effects: Mild local irritation of mouth and throat, coughing, rhinitis that may decline with continued use	Not a true inhaler-the nicotine is delivered and absorbed buccally. "Hand-mouth" activity from using the inhaler is preferred by some quitters while others and to beat rigger. Useful in those with poor oral health or dentures and in those who Cannot chew gum.
NRT: Immediate Release Nicotine gum (Nicotex)	10-12 pieces per day initially (2mg or 4mg pieces) to maximum of 20 pieces per day, for 12 weeks. Tapering: 1 piece/day each week, as withdrawal symptoms allow	Side effects: Mouth soreness, hiccups, dyspepsia, jaw ache	Use 4mg in heavily Dependent smokers. May Be used for temporary abstinence-e.g. To comply with smoking restrictions on aeroplanes.
NRT: Immediate release Nicotine Lozenge (Nicorette)	1 lozenge (2mg or 4mg lozenges) every 1-2h up to 6 weeks; weeks 7-9 every 2-4h; weeks 10-12, every 4-8h	Side effects: Nausea, hiccups, heartburn, headache, coughing.	
NRT: Immediate release Nicotine nasal Spray (Nicorette)	1.0mg of nicotine per spray (10ml bottle contains 100mg nicotine) 1-2 doses/h up to 40 doses per day; for 3months	Side effects: Mildnasal/ throat irritation	
Antidepressant: Bupropion	150mg daily 63 days then 150mg twice daily 6 7-12 weeks. Begin 1-2 weeks before the selected quit date	Side effects: Insomnia, dry mouth	Not recommended in patients with conditions predisposing to seizures, history of seizures, current eating disorder or severe hepaticimpairment. Least expensive of oral medications indicated for Smoking cessation.
Nicotine receptor partial agonists Varenicline	0.5mg daily for 3days, then twice daily for 4 days then 1mg by mouth twice daily for 12weeks. Patient should quit smoking 1-2 weeks after starting the medication. Reassess if patient is still smoking 4 weeks after starting medication; can be continued for an additional 12 weeks if patient has benefited. No tapering necessary.	Side effects: nausea, sleep disturbance, abnormal/ vivid/ strange dreams. Drug interactions: should not be combined with NRT therapy because of increased risk of adverse effects	Does not induce Cytochrome P450enzymes; excreted renally unchanged. Smokers considering use of varenicline should be screened for a history of psychiatric disorders, have close monitoring and be advised to report any adverse effects they might experience. Care and close surveillance needs to be taken if

			prescribing to Patients with psychiatric disorders.
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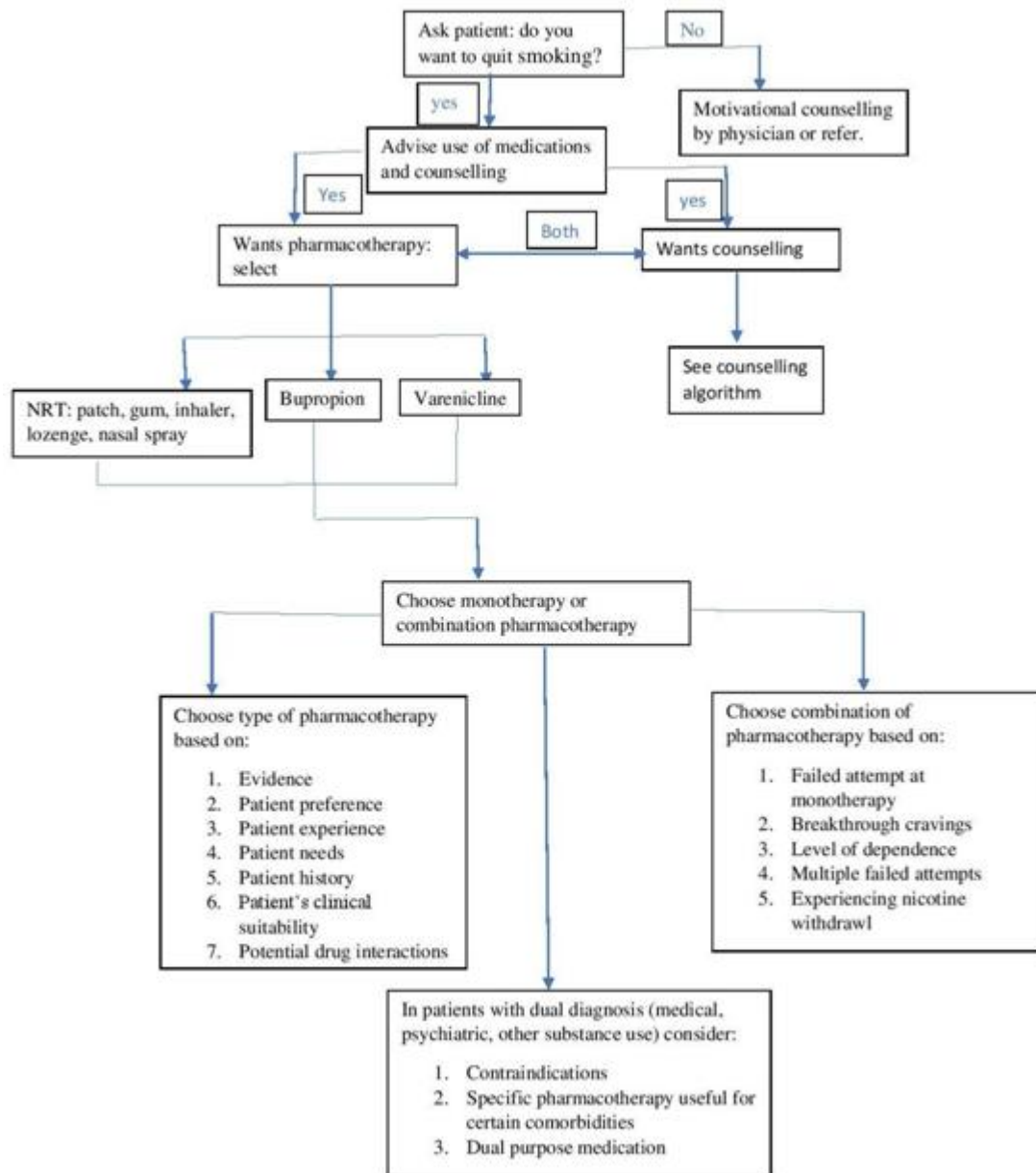


Chart 1: Algorithm for tailoring pharmacotherapy for smoking cessation<sup>16</sup>

**Combination Medications**

A number of combinations of medications are also effective in improving quitting success, and using two types of tobacco cessation medications simultaneously can improve quit rates when compared with one medication. Combination therapy or high-dose nicotine replacement therapy (NRT) may be suitable for those who are highly nicotine dependent or have a history of severe withdrawal symptoms.

The following combination therapies are effective in increasing quit rates.

- 1) Long-term nicotine patch + other NRT product (gum or spray)
- 2) Nicotine patch + nicotine inhaler
- 3) Nicotine patch + Bupropion SR

**Treatment Options**

It is important to provide wide range of treatment options, as success with particular methods varies among individuals. The process of quitting usually involves several attempts, the different types of cessation medications are used before achieving success. The combination of medications and counselling is more effective than use of either method alone.

**Role of Oral Medicine Expert**

An ideal tobacco use cessation programme must be individualised, that should account for the reasons a person uses tobacco, the environment in which the use occurs, available resources to quit and individual preferences about how to quit. The clinician should always bear in mind that cessation can be very difficult to achieve, and it is important to be patient and persistent in developing, implementing and providing each patient with an individual cessation-programme.<sup>17</sup>

There is increasing evidence that the success of any tobacco use cessation strategy or effort cannot be divorced from the health care system in which it is embedded. Several behavioural and pharmacologic interventions are recognised as having high levels of supporting evidence of effect.<sup>34</sup> These include counseling by various health care providers including oral health professionals, nicotine replacement and bupropion therapies. High levels of evidence means that there are 'multiple well-designed randomized clinical trials, directly relevant to the recommendation that yield a consistent pattern of findings'. Indeed, the data are compelling that pharmacological and counselling treatment each independently boost cessation success.<sup>18</sup> The oral medicine expert can use any of the above mentioned methods for assessment of nicotine dependence of patient and tailor the cessation Programme accordingly.

Tobacco use cessation (TUC) in dentistry is critical for reducing the effect of a major risk factor for both oral and systemic diseases.<sup>17</sup> Oral medicine experts (particularly dentists and dental hygienists but also including other dental care professionals) may see their patients on a frequent and recurring basis.

Behavioural counseling interventions in clinical settings are an important means of addressing prevalent health-related behaviours, such as lack of physical activity, poor diet, substance (tobacco, alcohol, and illicit drug) use and dependence, and risky sexual behaviour. In the dental setting, this may be viewed in a similar context.<sup>18</sup>

Motivational interviewing (MI) is a style of behavior change counseling (motivational enhancement therapy) developed originally to prepare patient's goals and encourages them to reach those goals. It was applied for the first time to tobacco cessation practices in 1998, in a hospital emergency room with adolescents.<sup>19</sup>

Oral Medicine Expert have many opportunities and play an important role to reduce the prevalence of tobacco use and promoting tobacco cessation. Even so, tobacco cessation activities do not play a prominent role in dental practice. An estimated 50% of smokers visit a dentist annually which gives them the opportunity to associate cessation advice with readily visible changes in the oral status. Therefore, the dental office may be ideally suited to help patients quit smoking.<sup>17</sup>

#### **Supportive therapy, follow-up and relapse prevention<sup>20</sup>**

Dentist must consider supportive therapy for use on a case – by – case basis after first line medications (either alone or in combination).

Tobacco users, who have recently quit, face a high risk of relapse. Although most relapse occurs early in quitting process, some relapse occurs months or even years after the quit date. The best strategy for producing high long-term abstinence rates appears to be the use of the most effective cessation medication during the quit attempt and providing practical advice and motivation in each visit. The first prescription is advised for at least 15 days, making it a point to emphasize the total duration therapy, follow up with the

patient should be. First month: weekly contact, 2<sup>nd</sup> and 3<sup>rd</sup> months: monthly and for rest of first year: quarterly.

## **2. Conclusion**

Tobacco smoking and chewing is one of the prime factors responsible for oral pre-cancer and cancer. The incidence and prevalence of such lesions in South Asian countries like India is high owing to the increased production and consumption of tobacco. The relative lack of awareness regarding the harmful effects of tobacco is a major reason for the same. Preventive measures should begin at grass root levels aimed at individuals who are at high risk for tobacco usage along with intervention at community level and policy level interventions by the concerned policy makers. Oral Medicine Experts should play an active role in prevention and control of tobacco induced lesions due to the direct contact with patients who are at increased risk.

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