



NICOTINE DEPENDENCE AND EFFECTIVENESS OF NICOTINE REPLACEMENT THERAPY (NRT) AMONG TOBACCO USERS VISITING A HOSPITAL.

Clinical Research

Dr. Manmeet Kour MDS (Oral Medicine And Radiology).

Dr. Anshuman Dwivedi* MDS (Oral And Maxillofacial Surgery). *Corresponding Author

Dr. Nida Afroz MDS (Oral Pathology And Microbiology).

ABSTRACT

The major cause of cardiovascular diseases, respiratory diseases and cancer is smoking. Effective treatment is needed to help smokers stop smoking in order to overcome this public health burden. Behavioral support along with Nicotine Replacement Therapy (NRT) has been proven to be effective in helping a wide range of smokers to quit. Keeping this in mind a study was programmed in the hospital comprising of 317 patients with a positive history of tobacco smoking. The patients were evaluated using Fagerstorm Nicotine Dependence Test (FNDDT) and willing patients were prescribed with Nicotine Gums with behavioral management. Depression, Anxiety, Stress Score (DASS 42) was also assessed before and after the therapy. And a conclusion was made that NRTs are very effective in reducing the withdrawal symptoms like Depression, anxiety & stress levels among those who are willing to quit tobacco and thus helpful in tobacco cessation.

KEY POINTS:

- Through this study we get to know that after using the nicotex gums which are a form of NRT the DASS 42 score decreases which implies that the withdrawal symptoms get reduced and also the patients were able to quit tobacco habit completely.
- Besides the improvement in the DASS score the main lack in this study was that very less people agreed with the Nicotine replacement therapy.

KEYWORDS

NRT (Nicotine Replacement Therapy), FNDDT (Fagerstorm Nicotine Dependence Test), DASS (Depression Anxiety Stress Score)

INTRODUCTION

The leading cause of morbidity and mortality is tobacco due to its association with respiratory diseases, cardiovascular diseases, strokes and cancer.¹¹ Restraining oneself from tobacco can substantially reduce these risks. Surgical treatments additionally has been reported to increase the possibility of quitting tobacco in smokeless and smoke form, even if the surgical intervention is not related directly to the patients smoking status.⁷ With the help of tobacco cessation there are chances of reduction in the risk of developing and dying from smoke related diseases.⁵

Many quit attempts fail as the reason behind this is that these are usually unplanned so that the most effective cessation aid may not be used.² The literature has reported newer drugs in recent years for smoking cessation treatments. Many smoking intervention strategies are assisted by the availability of several pharmacotherapies.¹¹ One of these therapies is the Nicotine Replacement Therapy (NRT). National Institute for Health and Clinical Excellence provides the guidance and instructions for the use of NRT.² NRT are available in transdermal patches, nasal spray, inhaler, gums, microtab and lozenges.⁵ Transdermal patches provide a slow sustained release of nicotine whereas gums, micro tabs, lozenges and inhalers are acute dosing forms of nicotine release, by providing general craving relief with immediate release of nicotine. NRT in different forms have different levels of efficacy but nevertheless are effective without behavioral management.¹

METHOD AND MATERIALS

This was a prospective clinical trial in which a total of 1725 patients visiting the OPD in the hospital, were screened and demographic details were recorded. The patients were asked about their tobacco consumption habits. Among which, 317 patients who gave positive history of tobacco use were asked about the form of tobacco (smoke and smokeless) they were consuming. The patient were also screened for any associated lesion present in the oral cavity. To put more light on this topic the dependence of nicotine in patients consuming tobacco was performed using Fagerstorm nicotine dependence test (FNDDT). FNDDT is a standard test for assessing the intensity of physical addiction to nicotine. It is purely done to evaluate the quantity of tobacco consumption, compulsion to use and its dependence. The patients willing for the cessation were given NRT in the form of chewing gums. Patients were educated and instructed the use of the chewing gums. Patients were also advised to avoid the acidic beverages (soda, coffee, beer etc.) for 15 minutes before and during chewing gum as the acidic beverages have been shown to interfere with buccal absorption of nicotine. Depression, anxiety & stress levels

were assessed (DASS 42) among these patients before & after the NRT.

RESULTS

According to the data so recorded, the majority of people consuming tobacco were falling under the productive age of 16 to 60 years, (fig 4) endangering their lives and their loved ones. In this study descriptive statistics were used and illustrated in percentage frequency. Out of 1725 patients 55.8% of the patients were males and 44.1% were females (fig 1). A total of 317 patients i.e., 18.4 %, of the total, gave positive history of tobacco consumption in some form or other (fig 2). Out of these patients, 40% were consuming tobacco can be categorized as daily wagers, 37.89% as employees in government & private sector, 13.62 % as unemployed (mainly including females and elderly) and 6.31% as students (fig 3). The data reflected that majority of patient consumed tobacco in the form of bidi (54.7%), followed by cigarettes, beetle-nut, pan-masala and least with quid. Out of 18.4% patients; 5.7% showed lesions in their oral cavity (fig 5). In our study majority of patients (56 %) showed low dependence on nicotine, who apparently may not need any form NRT and can be treated by only giving psychological counselling and motivation. (Fig 6) FNDDT scoring of the patients was performed and in the present study in which majority of the patients showed low to moderate dependence on nicotine (Fig 7). Then the patients who were willing to undergo behavioral management along with NRT were provided with a DASS 42 test. A total of 28 patients were willing for the further treatment. Out of 28; 3 patients lost the follow up. Depression, anxiety & stress levels were assessed (DASS 42) among these patients before & after the NRT. It was noted that there was substantial decrease in the depression level as 11 patients got back to normal state and 23 patients those who were having mild depression level got reduced to 14 post NRT.(Fig 8-9). And there was also a huge reduction in the anxiety level as 11 patients reverted back to normal state and 15 patients having moderate anxiety levels got reduced to 5 post NRT (Fig 10-11). While 15 patients with moderate stress level got reduced to 6 post NRT (Fig 12-13). These results are inferred from 6 months follow up.

DISCUSSION

The purpose of this study was to know the incidence and form of tobacco used in the demographical location and also to investigate whether the tobacco users could reduce or quit the habit of smoking with the replacement therapy along with behavioral management. In our study more tobacco smoking habit was found to be in males i.e., 86.4% which coincide with the survey done by WHO in 2011 which shows that globally 40% of men smoke as compared with nearly 9% of women.¹⁶ Occupational status is more closely connected with the

working conditions than other socioeconomic indicators and our study revealed that the most consumption of tobacco was seen in the farmers and employed people than the people who were unemployed and students, which were not coincident with the study done by Prabhakar B et al that showed more prevalence of tobacco smoking in students and unemployed population.¹⁷ In the present study older age group was associated with greater prevalence of tobacco use as compared to those of younger age groups and these results were similar to the results of the study by Prabhakar B et al.¹⁷ Appreciable thing in the present study was that 66% of the patients were willing to quit the habit with the aid of NRT along with the behavioral management. Current Clinical practice Guidelines recommend addressing patients using a five step strategy which is called as 5A's i.e., ask about tobacco use, advice smokers to quit, assess smokers, willingness to make a quit attempt, assist with treatment and arrange follow ups.¹⁴ A study done by Conroy et al emphasized a strong association between 5A tobacco counselling steps and satisfaction with overall health care as well as tobacco related care.¹⁴ In our study, nicotine chewing gums were prescribed to the patients along with behavioral management. NRT helps in the reduction of motivation towards the consumption of tobacco and also reduces the physiological and psychomotor withdrawal symptoms through the delivery of nicotine. NRT can be given in various forms like transdermal patches, micro tabs, lozenges, inhalers, gums. In the present study nicotine chewing gums were given to patients. It is not chewed ordinarily, but is intermittently chewed and held in mouth over about 30 minutes, as needed, to release its nicotine. It is available in 2 and 4 mg concentration and is prescribed to patients according to the severity of tobacco consumption. In the present study DASS 42 scale was used pre and post Nicotine Replacement Therapy and the depression, anxiety and stress levels were lowered after the use of nicotine gums which suggests that the NRT with psychological counselling is helpful in quitting the habit of tobacco smoking as well as preventing the withdrawal symptoms.

CONCLUSION

Cigarette smoking is associated with significant morbidity and mortality. Therefore, aggressive efforts are needed to promote smoking cessation and banning of various tobacco products. Effective motivation both on the part of the doctor and the family members have proved in complete tobacco cessation by the consumer. In addition, both pharmacological and non-pharmacological techniques support the consumer to triggering the process of cessation. NRT has been available for more than two decades and has been shown to be safe and effective for stopping smoking. So by this study we came to an inference that NRTs are very effective in reducing the withdrawal symptoms like Depression, anxiety & stress levels among those who are willing to quit tobacco and thus helpful in tobacco cessation.

GRAPHS AND PIE CHARTS

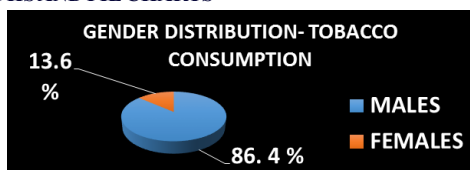


Fig 1 showing the pie chart of gender distribution among the tobacco consumers.

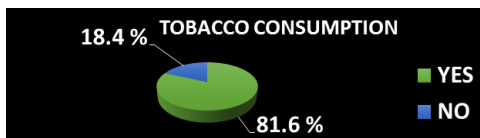


Fig 2 showing the pie chart of people consuming tobacco.

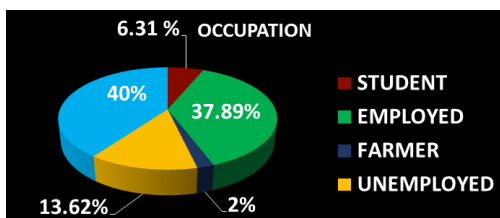


Fig 3 showing the pie chart of tobacco consumers and their occupation

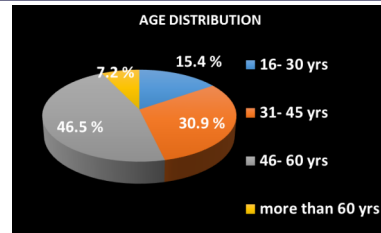


Fig 4 showing the pie chart illustration of age distribution of tobacco consumers.

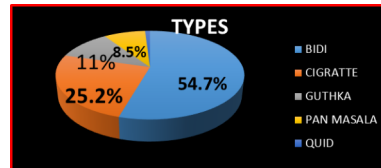


Fig 5 showing the pie chart illustrating the common used form of tobacco.



Fig 6 showing the pie chart illustrating the people willing to quit the habit of tobacco.

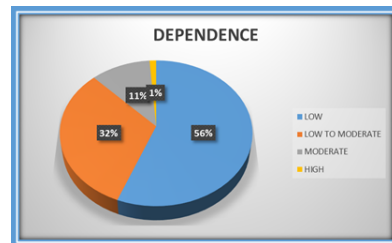


Fig 7 showing the pie chart illustrating the FNDDT in the tobacco consumers.

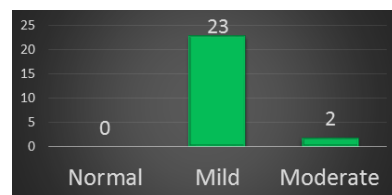


Fig 8 showing pre NRT depression score on DASS 42 scale.

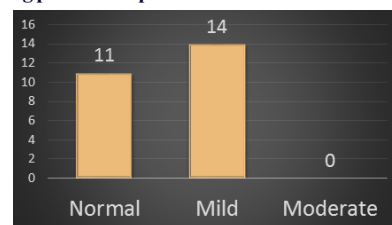


Fig 9 showing post NRT depression score on DASS 42 scale.

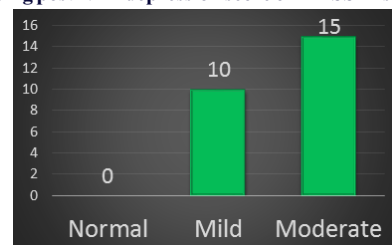


Fig 10 showing pre NRT anxiety score on DASS 42 scale.

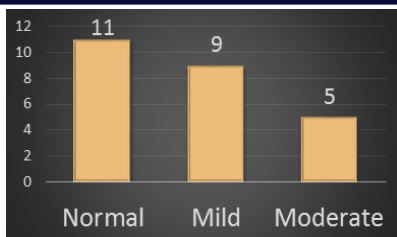


Fig 11 showing post NRT anxiety score on DASS 42 scale.

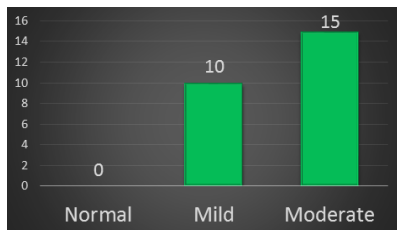


Fig 12 showing pre NRT stress score on DASS 42 scale.

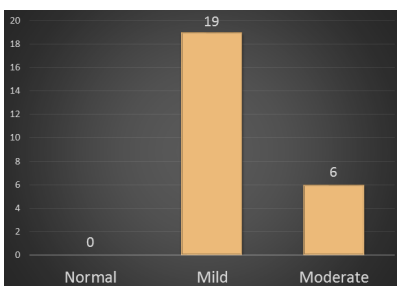


Fig 13 showing post NRT stress score on DASS 42 scale.

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