

Original Article

A Study of Clinical and Cardiovascular Profile in Tobacco Addicts (>10 years) in under 50 years of age in a Medical College Hospital

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ABSTRACT:

Background: Tobacco use continues to be the leading global cause of preventable death. It kills nearly 6 million people and causes hundreds of billions of dollars of economic damage worldwide each year. Most of these deaths occur in low- and middle-income countries, and this disparity is expected to widen further over the next several decades. This study is being taken up with the modest aim of identifying occult coronary artery disease in tobacco addicts and to correlate the results with mode, quantity, duration and distribution to tobacco addiction. **Materials and Methods:** 200 cases were taken who were addicted to tobacco and were between the ages of 24-50 and had been consuming tobacco in any form for at least 10 years. Detailed history was taken and routine haematological and biochemistry tests were undertaken along with Chest x ray, ECG and Treadmill test. **Results:** Maximum number of tobacco addicts i.e. 87 (43.5%) were in the 41-50 years age group. Chewing was the most common form of addiction. 79 patients i.e. 39.5% consumed more than 6-10 gm/day. Atypical chest pain was the most common presenting symptom in tobacco addicts. **Conclusion:** Our study revealed there is a positive co relation between tobacco chewing and hypertension. Most tobacco addicts complained with chest pain however TMT positivity was more in those with abdominal pain. The TMT positivity increased with the duration of tobacco addiction and not with the quantity.

Key words: Cardiovascular Profile, Tobacco Addicts.

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INTRODUCTION

Tobacco is the only legal consumer product that can harm everyone exposed to it – and it kills up to half of those who use it as intended. yet, tobacco use is common throughout the world due to low prices, aggressive and widespread marketing, lack of awareness about its dangers, and inconsistent public policies against its use.¹

In their 2010 guidelines, the American Heart Association (AHA) and the American Stroke Association (ASA) strongly recommended that smokers consider smoking cessation because of the direct correlation between smoking and both ischemic stroke and subarachnoid haemorrhage. Clinicians should provide counselling, nicotine replacement, and oral smoking cessation medications as options. Avoiding exposure to environmental tobacco smoke is reasonable.²

Tobacco use is one of the main risk factors for a number of chronic diseases, including cancer, lung diseases, and cardiovascular diseases.

MATERIALS AND METHODS

Type of Study

It was an observational study conducted at Shyam Shah Medical College and Associated S.G.M.H. Rewa from October 2010- November 2012. A Sample of 200 patients attending the OPD with self reported addiction of tobacco consumption.

Inclusion criteria:-

- Subjects who were addicted to tobacco atleast last 10 years are included in this group.
- This group includes 200 subjects between ages of 24-50 years.

Exclusion criteria:-

- Subjects with history of IHD, hypertension, diabetes mellitus, valvular heart diseases and chronic respiratory disease and other associated risk factors, (obesity, hyperlipidemia etc) are excluded from this study.

- Subjects with abnormal resting ECG and with any contraindication of T.M.T. are also excluded from this study.

to detailed clinical examination, routine haematological and biochemical examination along with Chest X ray, ECG and Treadmill testing.

A written informed consent was taken from all patients, complete history and clinical examination done according to a proforma. Duration of tobacco consumption was taken as the period from the diagnosis of hypertension until the time of assessment. Then patients were subjected

Statistical Analysis

Data was collected and analysed via Chi-square test to assess the categorical data presented as numbers and percentages. P value of 0.05 or less was considered statistically significant.

RESULTS

Distribution of tobacco addicts according to Age

S.No.	Age	No. of addicts (n=200)	Percentage (%)
1	Up to 30	28	14
2	31 to 40	85	42.5
3	41 to 50	87	43.5

$X^2=114.28$ $p<0.05$ (Significant)

In study the above table shows most of the subjects were in the age group of 41-50 years (43.5%).

Distribution of tobacco addict according sex group

S.No.	Sex group	No. of cases (n=200)	Percentage (%)
1	Male	193	96.5
2	Female	7	3.5
	Total	200	

$X^2=345.96$ $p<0.05$ (Significant)

The above table shows majority of the tobacco users were male (96.5%).

Distribution according Modes of Tobacco addiction

S.No.	Mode of Tobacco Consumption	No. of Cases (n=200)	Percentage (%)
1	Chewer	138	69
2	Smoking	20	10
3	Chewer + Smoking	42	21

$X^2=177.18$ $p<0.05$ (Significant)

It is evident from above table that chewing was common mode of tobacco addiction (69%).

Distribution according Duration of Tobacco Addiction

S.No.	Duration (in yrs)	No. of Cases (n=200)	Percentage (%)
1	10 to 15	54	27
2	16 to 20	47	23.5
3	>20	99	49.5

$X^2=35.84$ $p<0.05$ (Significant)

The above table shows, duration of tobacco addiction. Maximum subjects were consuming tobacco for more than 20 years.

Distribution according Quantity of Tobacco addiction

S.No.	Quantity Consumption	No. of Cases (n=200)	Percentage (%)
1	Up to 5gm/day	13	6.5
2	6-10gm/day	79	39.5
3	11-15gm/day	57	28.5
4	>15gm/day	51	25.5

$X^2=60.27$ $p<0.05$ (Significant)

The above table shows that daily consumption of tobacco varied from less than 5 grams to more than 15 grams per day. Maximum number of person was consuming tobacco between 6-10 grams/day.

Distribution according various symptoms in Tobacco Addicts

S.No.	Symptoms	No. of Cases (n=200)	Percentage (%)
1	Asymptomatic	89	44.5
2	Symptomatic (n=111)		
	a) Atypical Chest Pain	97	48.5
	b) Abdominal Discomfort	14	7

$X^2=94.33$ $p<0.05$ (Significant)

It is evident from the above table among the study group that 89 subjects (44.5%) were asymptomatic. It is suggestive that atypical chest pain was the most common associated symptom (48.5%).

Distribution according Age at onset of Addiction

S.No.	Age of onset (in yrs)	No. of Cases (n=200)	Percentage (%)
1	Up to 15	83	41.5
2	16 to 20	65	32.5
3	21 to 25	47	23.5
4	>25	5	2.5

$X^2=89.28$ $p<0.05$ (Significant)

Above table shows most of the subjects started tobacco before 15 years of age (41.5%) and those numbers were much less after 25 years (2.5%).

Associated Comorbidities with tobacco addicts

S.No.	Associated Comorbidity	No. of Cases (n=200)	Percentage (%)
1	Systemic:-		
	a) Hypertension	14	7
	b) Dyslipidemia	19	9.5
2	Local:-		
	a) Plaques in oral cavity	61	30.5
	b) Gingivitis	16	8
	c) Oral Ulcer	18	9
	d) Submucous fibrosis	15	7.5

In the present study the above table shows common systemic finding was hypertension in 7% subjects and most common local finding was plaques in oral cavity in 30.5% subjects.

Positive TMT in relation to age

S.No.	Age (in yrs)	Positive TMT (n=16)	Negative TMT (n=184)	No. of cases (n=200)
1	up to 30	0(0%)	28(100%)	28
2	31 to 40	3(3.5%)	83(96.5%)	85
3	41 to 50	13(14.9%)	74(85.1%)	87

$X^2=13.86$ $p=0.00097$ (Highly significant)

It is evident from above data that the number of positive T.M.T. cases increases with age. In 41 to 50 year age group incidence of positive T.M.T. was more common (14.9%). This table shows that age is very important factor causing ischemic heart disease. It indicates that number of positive T.M.T. increase with increase amount of tobacco consumption.

Positive TMT in various mode of addiction

S. No.	Mode of Addiction	Positive TMT (n=16)	Negative TMT (n=184)	No. of cases (n=200)
1	Chewer	9(6.52%)	129(93.48%)	138
2	Smoking	2(10%)	18(90%)	20
3	Chewer + Smoking	5(11.9%)	37(88.1%)	42

$X^2=1.424$, $p=0.994$ (Not significant)

Above table shows that chewing is most common mode but positive T.M.T. cases were more common in the group who consumed tobacco by both modes smoking and chewing (11.9%).

Positive TMT in relation to Duration of Tobacco Addiction

S. No.	Duration (in yrs)	Positive TMT (n=16)	Negative TMT (n=184)	No. of cases (n=200)
1	10 to 15	0(0%)	54(100%)	54
2	16 to 20	3(6.3%)	44(93.7%)	47
3	>20	13(13.13%)	86(86.87%)	99

$X^2=8.40$ $p=0.0150$ (Significant)

The above table shows that the number of positive T.M.T. was more common in the age group of more than 20 years. It indicates that the incidence of positive T.M.T. increases with duration of addiction.

Positive TMT in relation to Quantity of Tobacco Addiction

S.No.	Amount of Tobacco	Positive TMT (n=16)	Negative TMT (n=184)	No. of cases (n=200)
1	up to 5gm/day	0(0%)	13(100%)	13
2	6 to 10gm/day	2(2.53%)	77(97.47%)	79
3	11 to 15gm/day	3(5.26%)	54(94.74%)	57
4	>15gm/day	11(21.5%)	40(78.5%)	51

$X^2=17.68$ $p=0.00051$ (Highly significant)

Above table shows that most of the people were consume tobacco 6 to 10 gram/day and the incidence of positive T.M.T. was more common in subjects consuming tobacco more than 15 gram/day (21.5%).

DISCUSSION

Nicotine is highly addictive. People become addict to tobacco in young age and remain addict to it till late age or till they have ill effects of tobacco. Most of the tobacco addicts in the present study were in the age group of 41 to 50 years (43.5%) and data was statistical significant. In present study the youngest person who started to use tobacco was 10 year old. Prabhakar et al (2005) observed that the majority of the tobacco addicts were in age group of 41 to 50 years (27%) and more than 50 years (53.0%).³The observations are comparable to present study. As the age increases number of addicts also increases.

Tobacco addiction persists for long duration, people remain addicted to tobacco for most of their lifetime. In this study most of the subjects consumed tobacco for more than 20 years (49.5%).

Doll, R. et al (2004) observed that smokers were three times more likely to die before the age of 60 or 70 as compared to non-smokers.⁴ From the above studies, it is clear that as the duration of addiction increases the amplitude of disease, which is closely related to addiction, also increases and it was also present in present study.

Daily tobacco consumption ranged from 5 gram per day to more than 15 gram per day. The rural and low socioeconomic population was consuming large amount of tobacco in comparison to urban population. In present study most of the subjects were consuming tobacco 6-10 gram per day (39.5%) and result was statistically significant. Chewing was the most common mode of addiction in present study. 69% were chewer, 10% smoker and 21% used both.

Study shows that in both sex groups males had higher incidence of tobacco addiction than females (96.5% and 3.5% respectively). In the Sentinel Survey in three

districts of Karnataka of persons 10 years of age and above, 49.2% of males and 16.4% of females in the rural areas were tobacco users. In the urban areas, 32.7% of males and 8.5% of females were tobacco users. In both urban and rural areas, about two-thirds of male users smoked, while most female users chewed tobacco.⁵ From the above observation it is clear that the number of tobacco addiction is most of the time greater in males. History suggestive of atypical chest pain was the most common symptom in 97(48.5%) tobacco addicts in present study. Abdominal discomfort was also present in 7% subjects. 44.5% subjects were asymptomatic in present study. B.K.Gupta et al (2007) observed that, in Group I(smokers) and Group II(chewers) subjects the symptoms of chest pain (63 vs. 78, $p<0.01$), breathlessness (30 vs. 27, $p<0.01$) were significantly greater than headache (4 vs. 10, $p<0.05$) and palpitation (10 vs. 12, $p<0.05$).⁶ Chest pain and breathlessness were common finding in above observation, finding correlate with this study.

In the present study hypertension was the most common systemic finding in 7% subjects. Dyslipidaemia was present in 5.5% subjects. Plaques in oral cavity were the most common local finding in 30.5% subjects. Other finding in oral cavity were ulcers, gingivitis and sub mucous fibrosis.

Hazarika NC et al (2002) observed that the smokeless tobacco is a risk factor for hypertension and adverse blood lipid profile, although perhaps to a lesser extent than smoking. A study of Assam tea garden workers found that consumption of locally prepared alcohol, intake of extra salt and the habit of using *khaini* increased the risk of hypertension.⁷

Naresh R. Makwana et al (2006) observed that smoking habit usually begins during adolescence. Overwhelming majority of smokers started to using tobacco before the

age of 19 year. Main observations of the study were, 33.12% of the adolescents were addicted with one or other type of tobacco chewing, majority of addicted adolescents were in the age group of 17- 19 years (36.26%).⁸ Similarly in same age group incidence of positive T.M.T. was 14.9% found in present study and data was statistically significant (p=0.00097).

In the present study, it was observed that positive TMT was more common in persons consuming tobacco >15gram per day, but study also indicates that incidence of ischemic heart disease increased with the increase in amount of tobacco consumption and data was statistically significant (p=0.00051). Kenitz et al (1995) observed that tobacco use (81%) was the major risk factor for young adults admitted with acute myocardial infarction.⁹

In present study it was evident that the number of positive T.M.T. increases with the duration of addiction. Subjects who consumed tobacco from 16 to 20 years showed positive T.M.T. in 6.3% cases and who consumed tobacco for more than 20 years showed positive T.M.T in 13.13% cases and data was statistically significant (p=0.0150). Similar results were found by David et al (2003) in their study. They observed increased CHD with increased duration of smoking.¹⁰

CONCLUSION

- Most common mode of tobacco addiction was chewing in Rewa division and motivation by peer groups and family members emerged as the single most impelling factor for initiation of tobacco addiction.
- Hypertension was the most common systemic comorbidity which was associated with tobacco addiction, followed by dyslipidaemia.
- Maximum number of tobacco addicts presented with the complaint of chest pain but incidence of T.M.T. positivity was higher in subjects who presented with abdominal discomfort.
- Most of the tobacco addicts were in the age group of 41 to 50 year and the number of T.M.T. positivity (14.9%) was also higher in this age group.
- The number of tobacco addicts was higher in males but incidence of T.M.T. positivity was more in females. So tobacco addicted females require a closer evaluation for risk of CAD.
- The number of positivity of T.M.T. increases with the duration of tobacco chewing which was found to be more important than the amount of tobacco consumed.

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