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Smoking Pattern in Myocardial Infarction Patients: A Cross-Sectional Study

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Abstract

Introduction

Myocardial infarction is the major cause of disability and death from coronary artery disease.

It occurs when the blood supply to a part of the heart is interrupted causing some heart cells to die. This is most commonly due to occlusion of coronary arteries with an atherosclerotic plaque. The classic symptoms include sudden chest pain, breathlessness, nausea, palpitations, and sweating. One of the many factors that influence MI can be chronic smoking.

The present study explores the importance of smoking either cigarettes or beedies as risk.

factors for acute myocardial infarction. What is the probability of a chronic smoker facing myocardial infarction as compared to somebody with other probable causes like diabetes, hypertension, etc might be answered here?

Objective

To investigate the correlation between smoking and MI by analyzing the association and

potential risk factors involved.

Research Methodology

A Cross-sectional study was designed whereas per the inclusion and exclusion criteria, a total of 100 MI patients were included from a tertiary care hospital. Their smoking patterns were analyzed using a premade questionnaire and interviews. Data was collected and analyzed in Excel and Google Sheets by using t-test and z-test.

Result

From the population that underwent the survey amongst the male patients 25% had a history of chronic smoking. Along with this most of them had been smoking for at least more than 10 years. In the case of female patients, 9% had a history of smoking which they have been doing for the last 5-10 years. As seen from the data females are less likely to have a history of chronic smoking. Quite a few cases also show the presence of conditions of passive smoking.

Conclusion

Smokers have a high risk of Myocardial infarction as compared to nonsmokers. Along with other factors such as diabetes, hypertension, etc. having an addiction history of smoking cigarettes, and beedies, also leads to an increase in the probability of developing cardiac disease. Moreover, smoking is harmful as regards ischemic heart disease. It cannot be concluded proportionately but avoiding smoking may prevent the chances of MI up to a certain extent.

1. Introduction

Cardiovascular disease (CVD) is one of the leading causes of mortality worldwide, responsible for roughly 32 of all global mortalities. Among the various CVDs, acute myocardial infarction (AMI) results in a significant 30-day mortality of between 3- 14 **[1].** So, Myocardial infarction is the major cause of disability and death from coronary artery complaints. In many industrialized countries, it accounts for 10 – 25 of all deaths **[2].**

In roughly 50% of cases the condition is fatal, and numerous of the remainder suffer from disabled cardiac function **[3].** MI occurs when blood force to a part of the heart is intruded causing some heart cells to die. This is usually due to occlusion of coronary highways with an atherosclerotic plaque. There is a possible association of smoking with location of ST-segment elevation myocardial infarction (STEMI) **[4].** The classic symptoms of MI include unforeseen

chest pain, shortness of breath, palpitations, nausea, vomiting, pulsations, and sweating. One of the numerous factors that impact myocardial infarction can be habitual smoking and the others are a sedentary life, obesity, alcohol, diabetes, hypertension, etc. **[5].** Hence, the present study explores the significance of smoking either cigarettes or beedis as threat factors for acute myocardial infarction **[6].** Also relating the fact that more the number of years a person has as their history of habitual smoking more are the chances to precipitate MI and other cardiovascular complaints **[7].** The pitfalls of smoking about myocardial infarction (MI) are well-known, but several studies have established that the impact of smoking is larger in women than in men **[8].** A large meta-analysis was published of prospective cohort studies which set up that womanish smoker had 25% more advanced acclimated threat of coronary heart complaint than men who smoke **[9].** The threat of the conditions of unresistant smoking is also adding without the population realizing its dangerous goods **[10].** It still might be a misconception for a lot of people which needs to be addressed. And also, the effect of smoking on the normal mortal heart seems quite a misunderstood subject to a large number of people especially the ones from the lower middle class profitable background, hence the content chosen **[11].**

The frequency of MI is increasing day by day which makes the basis of the research.

2. Methodology

A cross-sectional analysis was carried out. The data was collected at a tertiary care hospital. A questionnaire was formed in a pen-paper format and the participants were asked to answer it. Demographic details of those participants were also obtained to relate their history of chronic smoking with their current situation of being active MI patients.

The questions were also oriented towards knowing the patient's eating habits, occupation, and lifestyle to relate the patient's history of addiction in case of any. Data collection was done individually once their consent was marked and after explaining to them the purpose and the method of study.

Inclusion Criteria: -

● Participants who were willing to give their consent.

● Participants who were admitted to the hospital and were active patients of MI at the time of data collection.

Exclusion Criteria: -

● Participants who did not give their consent.

● Participants having any disease other than myocardial infarction.

● Participants who couldn't speak for themselves and had no companion to answer for them.

The data gathered was analyzed using Excel sheets, Google Sheets, and z test.

3. Results

Table No 1 : *Gender Distribution*

MALE PATIENTS	FEMALE PATIENTS
65	35

Table No 2: *Number of cigarettes smoked by the patients (males)*

NUMBER OF CIGARETTES/DAY	NUMBER OF PATIENTS (MALES)
5-15 cigarettes/day	30
>15 cigarettes/day	12

Table No3: *Number of cigarettes smoked by the patients (Females)*

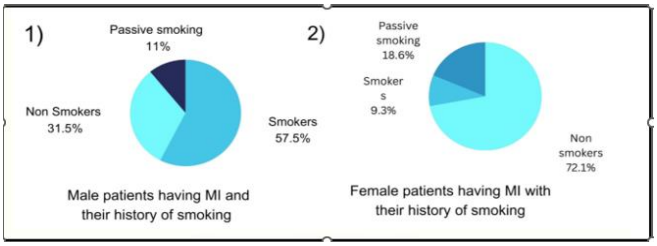
NUMBER OF CIGARETTES/DAY	NUMBER OF PATIENTS (MALES)
5-15 cigarettes/day	3
>15 cigarettes/day	1

Table No 4: *Active years of smoking in case of male patients*

ACTIVE YEARS OF SMOKING	NUMBER OF PATIENTS (MALE)
2-10 Years	18
10-25 Years	14
>25 Years	10

Table No. 5*: Active years of smoking in case of female patients*

ACTIVE YEARS OF SMOKING	ACTIVE YEARS OF SMOKING
2-10 Years	3
10-25 Years	1
>25 Years	0



4. Discussion

Table 1 from the result section shows the gender distribution. (Males = 65 & Females = 35) According to Sakshi et. In 2023 the number of female patients affected with MI and having a history of chronic smoking was about 9.3% whereas double the patients [18.6%] were exposed to the conditions of passive smoking. On the other hand, in the case of males, 57.5% of patients had a history of chronic smoking and only 11% were seen to have the conditions of passive smoking. On the contrary Birgette Iverson et. Al.2013 have concluded that passive smoking affects women more than it affects men **[12].**

Table 2 and Table 3 from the result section indicate the average number of cigarettes or beedies smoked by an individual throughout their active years of smoking for men and women respectively **[13].** It is evident that the number of cigarettes smoked per day is much more in the case of men than women. Along with-it table 4 and table 5 show the active years of smoking which again has a higher number for men than women. According to J. He et. Al 1994 a meta-analysis was conducted which showed a significant dose response relation concerning the number of cigarettes a person was exposed to irrespective of the active and passive factors **[14].** Smoking > or = 10 cigarettes or beedies/day carries an independent four-fold increased risk of acute myocardial infarction was concluded by P. Pais et. Al. 2001**[15].**

The two figures illustrate the charts that compare the numbers for nonsmoking, active smoking, and passive smoking patients individually for both males and females respectively. **[16].** According to Sakshi et. Al 2023 we can see the percentage of passive smoking affects women more (18.6%), than it does in men (11%) whereas, contrary to that Birgette Iverson et. Al. 2013 suggests that men spend more time in a smoke-filled room as compared to women **[17].** Passive smoking is a risk factor for myocardial infarction on its own, but whereas the effect for men seems to be explained by their active smoking, the effect in females remains statistically significant **[17].** Given the high prevalence of cigarette smoking, the public health consequences of passive smoking about coronary heart disease may be important.

5. Conclusion

The present study does convey that smoking is a detrimental risk factor concerning myocardial infarction. In approximately 70% of cases, men are affected by severe myocardial infarction due to their chronic history of smoking. But there are other risk factors like hypertension, diabetes, obesity, etc which should be taken into consideration. According to several studies regarding the correlation of smoking with CVD or specifically MI, variant results have concluded. Furthermore, the results point us in a direction where it can be concluded that the history of active smoking in the case of men makes them more vulnerable to cardiovascular disease [here, myocardial infarction]. Whereas, for women according to the statistical data, the conditions of passive smoking [approximately 20%] are more explanatory for their possible condition of myocardial infarction. Concerning the data of this study, the number of nonsmokers in females (72.1%) is more than double the number of men (31.5%).

Moreover, a lot of extra study and research is required to contribute to this subject to provide some concrete conclusions regarding the same.

6. Limitations

Population studies like this may be prone to selection bias. Follow-up reports weren't conducted due to time constraints. A small sample size may also be the cause of some fluctuations in the final results and conclusions when the odds ratio and p-value are taken into consideration. Minimal variables were considered for the study and other factors affecting the condition of MI weren't included in this study although a brief study was done during the process of data collection. It is also said that in prospective studies the relationship between the exposure and endpoint becomes weaker with increasing duration of follow-up.

7. References

1. Ching-Hui Sia, Junsuk Ko, Huili Zheng, et.al. Association between smoking status and outcomes in myocardial infarction patients undergoing percutaneous coronary intervention. 2021; 11: 6466.
2. Thomas A. G Asaf. B, Anand S, Shafika A.G, Adrianna M. Growing Epidemic of Coronary Heart Disease in Low- and Middle-Income Countries. 2010; 2:72-115.
3. M. A., & Omer, A. *Correlation of Smoking and Myocardial Infarction Among Sudanese Male Patients Above 40 Years of Age*. 2016.
4. Mehdi T, Samad G, Arezou T, Nasiri B, Ali R. The impact of cigarette smoking on infarct location and in-hospital outcome following acute ST-elevation myocardial infarction. 2019;1 1: 209-215.
5. Rahel A, Eileen E. F, John F. H, Mark F. Influence of Smoking on the Location of Acute Myocardial Infarctions. (n.d.). Hindawi. 2011.
6. E Prescott, H Scharling, M Osler, P Schnohr. Importance of light smoking and inhalation habits on risk of myocardial infarction and all-cause mortality. A 22 year follow up of 12 149 men and women in The Copenhagen City Heart Study.
7. Cristina B, Eva N, Alessandra T, Luigi S, Vecchia, C. Smoking and acute myocardial infarction among women and men: A case-control study in Italy. 1999; 29:343-348.
8. Eva P, Merete H, Peter S, Hans Ole H, Vestbo, J. (n.d.). Smoking and risk of myocardial infarction in women and men: longitudinal population study.1998;316:1043.
9. Giuseppina G, Alfredo T, Rosa L, Anna V. L, Alba M. C. Cardiovascular risk of smoking and benefits of smoking cessation. 2020.
10. Andreia O, Henrique B, Maria J. M, Lopes, C. (n.d.). Tobacco smoking and acute myocardial infarction in young adults: a population-based case-control study. Preventive Medicine. 2007; 44: 311-316.
11. Seok Oh, Kim J.H, Kyung H.S, Kim M.C, et.al. Association between baseline smoking status and clinical outcomes following myocardial infarction. Frontiers. 2022.
12. Birgitte I, Bjarne K. J, Maja-L L. Active and passive smoking and the risk of myocardial infarction in 24,968 men and women during 11 years of follow-up: the Tromsø Study. European Journal of Epidemiology. 2013; 28: 659-667.
13. Parish S, Collins R, Peto R, Youngman L, et.al., Cigarette smoking, tar yields, and non-fatal myocardial infarction: 14000 cases and 32000 controls in the United Kingdom. The International Studies of Infarct Survival (ISIS) Collaborators. 1995; 311: 471.
14. He, J. Vupputuri S, Allen K, Prerost M.R, et.al. Passive smoking and the risk of coronary heart disease--a meta-analysis of epidemiologic studies. N Engl J Med. 1999; 340: 920-926.
15. Pais P, Fay MP, Yusuf S. (n.d.). Increased risk of acute myocardial infarction associated with beedi and cigarette smoking in Indians: final report on tobacco risks from a case-control study.2001; 53: 731-735.
16. Julie R. P, Rosenberg L, Shapiro, S. "Low yield" cigarettes and the risk of nonfatal myocardial infarction in women. N Engl J Med. 1989; 320: 1569-1573.
17. Iversen B, Jacobsen K B, Løchen M L. Active and passive smoking and the risk of myocardial infarction in 24968 men and women during 11 years of follow-up: the Tromsø Study. Eur J Epidemiol. 2013; 28: 659-667.