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Study of association of various risk factors with ischemic heart disease

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Abstract

Background: Coronary artery disease which was once thought to be a disease of the urban populations now involving the rural community in an increased number. The global burden of coronary artery disease (CAD) is well documented. In most industrialized countries, CAD are leading cause of disability and death. Developing countries with previous low rates of CAD are now registering increased rates as economy develops **Aim & Objective:** 1. Prevalence of Dyslipidemia in ischemic heart disease. 2. To study the association of various risk factors with ischemic heart disease. **Methods: Study design:** A Cross Sectional Study. **Study setting:** Cardiology department of tertiary care centre. **Study population:** The study population included all the cases with ischemic heart disease patients admitted at a tertiary care center **Sample size:** 110 **Results:** majority of cases presented with HTN 59.09%, followed by Diabetes 40.90%, Obesity 34.54%, low physical activity 31.81%, Prevalence of Dyslipidemia was 33.63%, and Tobacco 10.90%. majority of cases age above 30 years 100% and 12 patients had a Family history of IHD. majority of cases was belonged in Above 45 years age group e.g 88.18% and 13 cases was found in less than 45 years age group. Males e.g 80 (72.72%) and 40 cases found in females (27.28%). The proportion of HTN among IHD cases was 30.76% and Non HTN cases was 69.24%. When statistical analysis using Chi-square test was done, proportion of HTN among IHD cases was statistically NOT significant at ($p < 0.05$)**.**

Conclusions: Hypertension is the most common Modifiable Risk factor for IHD, Prevalence of Dyslipidemia among IHD cases was 33.63%

Keywords: IHD, HTN, DM, Dyslipidemia,

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Introduction

Coronary artery disease which was once thought to be a disease of the urban populations now involving the rural community in an increased number. The global burden of coronary artery disease (CAD) is well documented. In most industrialized countries, CAD are leading cause of disability and death. Developing countries with previous low rates of CAD are now registering increased rates as economy develops.

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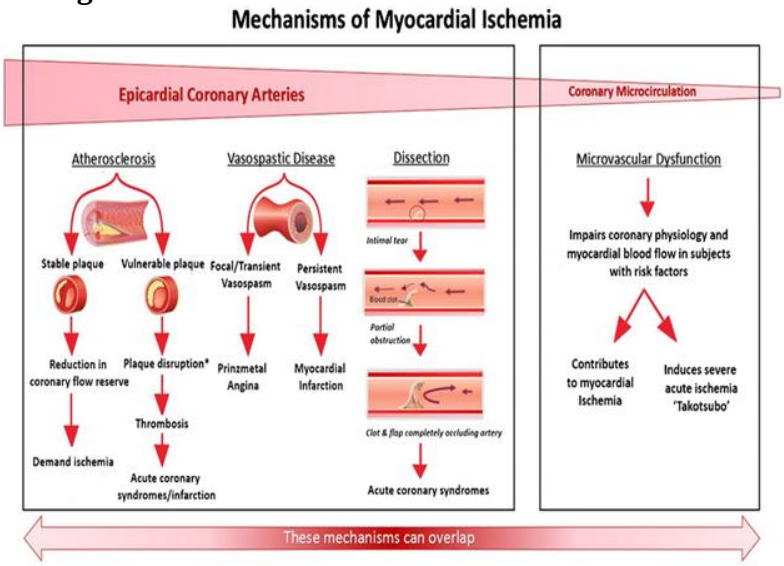
Therefore understanding the epidemiology of CAD is essential for reducing the mortality and morbidity risk and so improving the global public health status and risk factors measurement is an important predictor of coronary artery disease in currently healthy individuals.[1]
Cardiovascular diseases (coronary heart disease, stroke and hypertension) contribute to 45% of all non-communicable diseases (NCD) deaths followed by chronic respiratory diseases (22%), cancers (12%) and diabetes (3%).[2]
The overall prevalence of ischemic heart diseases in India is 37 per 1000 population.[3] Premature mortality in terms of years of life lost because of CVD in India increased by 59%, from 23.2 million (1990) to 37 million (2010). Despite wide heterogeneity in the prevalence of cardiovascular risk factors across different regions, CVD has emerged as the leading cause of death in all parts of India, including poorer states and rural areas[4]
Deaths due to coronary heart diseases and strokes were more common among the urban population at the turn of the century. But the trend has reversed since then. Between 2000 and 2015, the age-standardized rate of mortality (per 100,000 person years) due to coronary heart diseases increased among rural men by over 40% even as it declined among urban men.
For females, the increase was over 56% in rural India. In the high-burden states of the North-East, West Bengal and Chhattisgarh, stroke mortality rates were about three times higher than the national average [5] Family history of coronary artery disease and having hyperlipidemia, hypertension, diabetes, obesity and tobacco use are known major risk factor for coronary artery disease.

Aim And Objective

Objective

1. Prevalence of Dyslipidemia in ischemic heart disease.
2. To study the association of various risk factors with ischemic heart disease.

Pathogenesis:



Material And Methods

Study design: A Cross Sectional study
Study setting: Cardiology department of tertiary care centre
Study population: The study population included all the cases with Ischemic heart disease patients admitted at a tertiary care center
Inclusion criteria:

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1. All confirmed Ischemic heart disease patients admitted in Tertiary care center were included in the study

Exclusion criteria

1. Not willing to participate in the study.

Approval for the study

Written approval from Institutional Ethics committee was obtained beforehand. Written approval of Cardiology department was obtained. After obtaining informed verbal consent from all patients with IHD admitted to Cardiology ward of tertiary care centre such cases were included in the study.

Sample Size: 110

Sampling technique: Convenient sampling technique used for data collection. All IHD patients admitted in the Cardiology department of tertiary care center were included in the study.

Methods of Data Collection and Questionnaire

Predesigned and pretested questionnaire was used to record the necessary information. Questionnaires included general information, such as age, sex, religion, occupation of parents, residential address, and date of admission. Medical history- chief complain, past history, general examination, systemic examination

Data on demographic profile of stroke patient, investigation, personal history, medical past history, treatment modalities, and clinical outcome data collected from patients admitted in medicine ward.

All the procedures and investigations conducted under direct guidance and supervision of pg guide. Proforma of IHD notes maintained.

Screening procedure

History of patients including presenting complaints, medical illness, drug history, personal history, past medical history. **Clinical Examination-** General and systemic examination. Patients fasting blood sample were send for checking lipid profile. Patients blood sample were send for checking random lipid profile.

Data entry and analysis

The data were entered in Microsoft Excel and data analysis was done by using SPSS demo version no 21 for windows. The analysis was performed by using percentages in frequency tables and correlation of stroke. $p<0.05$ was considered as level of significance using the Chi-square test

Result and Observation

Table 1: Proportion of various Modifiable Risk factors of IHD (n=110)

Sr No	Risk factors of stroke	Frequency	Percentage
1	Hypertension	65	59.09%
2	Diabetes	45	40.90%
3	Dyslipidemia	37	33.63%
4	Tobacco	12	10.90%
5	Obesity	38	34.54%
6	Low physical activity	35	31.81%
	Total		**100**

The above table shows majority of cases presented with HTN 59.09%, followed by Diabetes 40.90%, Obesity 34.54%, low physical activity 31.81%,Prevalence of Dyslipidemia was 33.63%,and Tobacco 10.90%.

Table 2: Proportion of various Non-modifiable Risk factors of IHD (n=110)

Sr No	Non-modifiable Risk factors of IHD	Frequency	Percentage
1	Age above 30 years	100	100%

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2	Family History	12	12%
	Total	**130**	**100**

The above table shows majority of cases age above 30 years 100% and 12 patients had a Family
history of IHD

Table no 3: Distribution of cases according to Sex

Sr No	Sex	Frequency	Percentage
1	Male	80	72.72%
2	Female	40	27.28%
	Total	**110**	**100**

The above table shows majority of patients found in Males e.g 80 (72.72%) and 40 cases found in females (27.28%)

Table 4: Distribution of cases according to clinical features of IHD (n=110)

Sr No	Clinical features of IHD	Frequency	Percentage
1	Chest pain	96	100%
2	Radiating pain	37	37%
3	sweating	27	27%
4	Breathlessness	49	48%
5	Vomiting	21	21%
6	Abdominal pain	4	4%
7	Syncope	4	4%
	Total		**100**

The above table shows majority of cases had a complain of chest pain 96, followed by Breathlessness 49, Radiating pain 37 cases, sweating 27 cases, vomiting 21 cases ,abdominal pain was found in 4 cases and syncope in 4 cases.

Table 5: Association of Hypertension with IHD

Sr No	Hypertension	IHD				Total (%)
		Present	Percentage	Absent	Percentage	
1	Present	20	30.76%	45	69.24%	65(100)
2	Absent	10	22.22%	35	77.77%	45 (100)
	Total	**30**	**27.27%**	**80**	**72.73%**	**110(100)**

Chi- square- 0.9793, df-1, p-0.322361

The proportion of HTN among IHD cases was 30.76% and Non HTN cases was 69.24%. When statistical analysis using Chi- square test was done, proportion of HTN among IHD cases was statistically NOT significant at ($p < 0.05$)**.**

Discussion

Coronary artery disease which was once thought to be a disease of the urban populations now involving the rural community in an increased number. The global burden of coronary artery disease (CAD) is well documented. In most industrialized countries, CAD are leading cause of disability and death. Developing countries with previous low rates of CAD are now registering increased rates as economy develops.

Cardiovascular diseases (coronary heart disease, stroke and hypertension) contribute to 45% of all non-communicable diseases (NCD) deaths followed by chronic respiratory diseases (22%), cancers (12%) and diabetes (3%).[2]

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from 23.2 million (1990) to 37 million (2010). Despite wide heterogeneity in the prevalence of cardiovascular risk factors across different regions, CVD has emerged as the leading cause of death in all parts of India, including poorer states and rural areas[4]

In this study Proportion of various Risk factors of IHD 35 cases presented with low physical activity (35%) similar finding in the study of D'Avanzo et al., examined the relationship between physical activity and acute myocardial infarction (AMI) and confirm that low physical activity is an indicator of subsequent risk of AMI. [6] Similarly, Gong et al., suggested that a light indoor activity pattern is associated with reduced AMI risk [7]

In this study Proportion of HTN among IHD cases was 65% similar result found in the Singh B et al (2019)[8] He found that the overall prevalence of IHD among younger patients was 12.8% and risk factor for IHD was hypertension (16%)., other similar study observed the same result Lovleen C et al (2013)[9] He observed that the Hypertension risk factors were associated with MI.

In this study Proportion of Diabetes among IHD was 45%, proportion of diabetes was high as compared with Singh B et al (2019)[8] He found that the proportion of diabetes mellitus among IHD was (16.8%). similar result found in the study of Radomska E et al (2013)[10] He revealed that the Among the IHD patients, type 2 diabetes occurred in 5,346 (20.5%) subjects and was significantly more frequent in women than in men (28 vs. 16.6%; $P < 0.0001$).

In this study Proportion of Obesity among IHD cases was 38%. Similar result found in the study of Sonia S et al (2008)[11] He found that the Obesity risk factors were associated with IHD in women and men. Similar result observed in the study of Mishra TK et al (2016)[12] He found that the obesity were associated with IHD

In this study Proportion of Hyperlipidemia among IHD cases was 37%. Similar result found in the study of Sonia S et al (2008)[11] He found that the Hyperlipidemia were associated with MI in women and men. Similar result observed in the study of Mishra TK et al (2016)[12] He found that the Hyperlipidemia were associated with MI in women

In this study Proportion of Tobacco use among IHD cases was 12% as compared with other study our result was low. In the study of Sonia S et al (2008)[11] He found that the Tobacco use proportion was high as compared with our study result. High proportion of Tobacco use observed in the study of Mishra TK et al (2016)[12] He found that the Tobacco use were associated with MI. Similar result found in the study of Singh B et al (2019)[8]

References

1. Luepker RV, Evans A, McKeigne P, Reddy SK. Cardiovascular Survey Methods. 3RD ed. World Health Organization, Geneva; 2004.
2. WHO. Burden of NCDs and their risk factors in India. (Excerpted from Global Status Report of NCDs –2014). Available at: http://www.searo. who.int/india/topics/noncommunicable_diseases/ncd_situation_global_report_ncds_2014. pdf. Accessed on 2 January 2019.
3. PIB. NPCDCS: Managing Non-Communicable Diseases. Press Information Bureau, GOI. Available at: http://pib.nib.in/newsite/efeatures.aspx?relid =76249. Accessed on 2 January 2019.
4. Prabhakaran D, Jeemon P, Roy A. Cardiovascular Diseases in India: Current Epidemiology and Future Directions. circulation. 2016;133(16):1605-20.
5. Ke C, Gupta R, Xavier D, Prabhakaran D, Mathur P, Kalkonde YV, et al. Divergent trends in ischaemic heart disease and stroke mortality in India from 2000 to 2015: a nationally representative mortality study. Lancet. Lancet Glob Health. 2018;6(8):914-23.
6. D'Avanzo B, Santoro L, La Vecchia C, Maggioni A, Nobili A, Iacuitti G, et al. Physical activity and the risk of acute myo-cardial infarction. GISSI-EFRIM Investigators. Gruppo

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Italiano per lo Studio della Sopravvivenza nell'Infarto-Epidemiologia dei Fattori di Rischio dell'Infarto Miocardico. Ann Epidemiol 1993;3:645–51.

7. Gong J, Campos H, Fiecas JM, McGarvey ST, Goldberg R, Rich-ardson C, et al. A case-control study of physical activity pat-terns and risk of non-fatal myocardial infarction. BMC Public Health 2013;13:122.
8. SINGH B,Singh A, Goyal A, Chhabra S,Tandon R, Aslam N, Mohan B, Wander GS. The Prevalence, Clinical Spectrum and the Long Term Outcome of ST-segment Elevation Myocardial Infarction in Young - A Prospective Observational Study.CRM. Volume 20, Issue 5, May 2019, Pages 387-391
9. Lovleen C. Bhatia, Ruchi H. Naik.Clinical profile of acute myocardial infarction in elderly patients.Journal of Cardiovascular Disease Research.Volume 4, Issue 2, 2013,Pages 107-111
10. RADOMSKA E, SADOWSKI M, KURZAWSKI J, GIERLOTKA M, POLONSKI L. ST-Segment Elevation Myocardial Infarction in Women With Type 2Diabetes. DIABETES CARE,VOLUME 36, NOVEMBER 2013
11. Sonia S. Anand, Shofiqul Islam, Annika Rosengren, Maria Grazia Franzosi, Krisela Steyn, Afzal Hussein Yusufali, Matyas Keltai, Rafael Diaz, Sumathy Rangarajan, Salim Yusuf, on behalf of the INTERHEART Investigators, Risk factors for myocardial infarction in women and men: insights from the INTERHEART study, *European Heart Journal*, Volume 29, Issue 7, April 2008, Pages 932–940,
12. Mishra TK, Das B. ST-Segment Elevated Acute Myocardial Infarction: Changing Profile Over Last 24 Years. J Assoc Physicians India. 2016 Jun;64(6):28-34. PMID: 27739264.