

The rising trend of myocardial infarction in young individuals

Zohaib Sarfraz

Abstract:

Myocardial infarctions (MIs), commonly known as heart attacks, have been increasingly affecting younger individuals, raising concerns among researchers, healthcare professionals, and policymakers worldwide. This review investigates the concerning trend of increasing MIs in younger individuals and explores its implications for public health. MIs in those under 45 account for 10% of acute MIs in the United States, mainly caused by atherosclerotic coronary artery disease. Smoking is the most prevalent risk factor in young adults experiencing heart attacks. Gender differences in symptom presentation and risk profiles were observed, emphasizing the need for tailored interventions. Despite being younger, very young MI patients showed similar outcomes to older age groups, such as death, or prolonged health problems. The study underscores the urgency of addressing this emerging health challenge through targeted interventions, recognizing atypical symptoms, and individualized risk assessments to reduce the burden of heart attacks in the younger population.

Introduction:

Myocardial infarctions (MI) are when a blockage prevents blood reaching to the heart. MI's are a prevalent and serious medical condition that affects millions of individuals worldwide. Traditionally associated with older age groups, there has been a growing concern regarding the increasing incidence of heart attacks in younger people¹. This alarming trend has sparked significant interest among researchers, healthcare professionals, and policymakers alike, necessitating a thorough investigation into the underlying causes, risk factors, and potential implications for public health.

The purpose of this review is to provide a comprehensive examination of heart attacks occurring more frequently in younger individuals. By synthesizing and analyzing relevant studies, data, and expert opinions, this paper aims to shed light on the factors contributing to this trend and explore its potential implications for affected individuals, healthcare systems, and society at large. Moreover, it seeks to identify gaps in current knowledge, propose areas for future research, and ultimately, contribute to the development of effective preventive strategies and interventions.

Materials and Methods:

In this literature review, a comprehensive search was conducted to identify relevant articles published within the last five years (2018-2023), investigating heart attacks in younger individuals. The search strategy involved using databases such as PubMed, Google Scholar, and Web of Science with specific keywords related to heart attacks, myocardial infarction, risk factors, symptoms, and surveys on heart attacks. Articles were included if they focused on comparing age groups, studying risk factors and symptoms, examining young patient populations, or providing general and important information on heart attacks/myocardial infarction. Only peer-reviewed articles were considered to ensure the reliability of the findings.

After screening titles and abstracts and subsequently reviewing full-text versions, a total of relevant articles were selected for data extraction. The synthesis of findings organized into themes related to heart attacks in younger individuals, including prevalence, risk factors, symptoms, and studies specific to young patients. Additionally, the review aimed to offer a broader understanding by including general and important information on heart attacks/myocardial infarction.

Results:

The results of this literature review reveal that atherosclerotic coronary artery disease emerges as the leading cause, responsible for approximately 80% of these cases. Notably, smoking is the most prevalent risk factor in young adults experiencing MI. This increase in MI incidence may be linked to factors such as metabolic syndrome, diabetes mellitus, and non-traditional risk factors like stress, anxiety, and depression². MI in patients under the age of 45 accounts for a notable 10% of acute MIs in the United States, with the majority of cases occurring in men.³ The relative number of MI cases in young patients is on the rise, indicating a concerning trend³. Young women are also affected, with over 30,000 hospitalized with MI annually in the USA alone⁴.

Gender differences were observed in symptom presentation, with young women being less likely to present with chest pain compared to men, but young men, older men, and older women also occasionally presented without chest pain⁴. However, despite lower symptom severity, young women still reported chest pain and discomfort⁴. When comparing very young MI patients (under 40 years old) with those aged 41 to 50 years, similarities were found in their risk profiles, with the exception of higher substance abuse prevalence and lower hypertension rates in the very young group. Nonetheless, despite being on average 10

years younger and having less extensive coronary artery disease, very young MI patients exhibited similar 1-year and long-term outcomes when compared with the 41 to 50 years age group⁴.

Discussion:

After reviewing the data, a concerning trend becomes apparent: an increase in myocardial infarctions among the younger population. Atherosclerotic coronary artery disease is identified as the principal underlying cause, with smoking emerging as the most prevalent risk factor among young adults experiencing MIs. This underscores the imperative for targeted interventions to promote smoking cessation within this demographic.

The study highlights significant gender differences in symptom presentation and risk profiles among young individuals experiencing heart attacks. Young women are less likely to present with chest pain compared to men but report a higher number of symptoms overall⁴. These findings emphasize the importance of recognizing atypical symptoms, like chest pain and discomfort, and addressing gender-specific risk factors to ensure timely diagnosis and appropriate management in young women⁴.

Comparisons between very young MI patients (under 40 years old) and those aged 41 to 50 years reveal similarities in risk profiles, suggesting that age alone may not be the sole determinant of MI outcomes. Substance abuse prevalence and hypertension rates differ between the two age groups, highlighting the need for individualized approaches considering various risk factors and comorbidities.

Overall, the results underscore the urgency of addressing the rising incidence of heart attacks in younger individuals. Preventive strategies should target smoking cessation, promote healthy lifestyles, and consider both traditional and non-traditional risk factors. Tailored interventions for gender-specific risk profiles and comprehensive assessments of individual risk factors can significantly contribute to reducing the burden of MI in the younger population. By addressing these findings, public health efforts can effectively mitigate the impact of this emerging health challenge and improve outcomes for young individuals at risk of myocardial infarctions.

References

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