CODEN [USA]: IAJPBB ISSN : 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
SJIF Impact Factor: 7.187

Available online at: http://www.iajps.com *Review Article*

REVIEW; CARDIAC DISEASE PREVENTION MEASURES

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Abstract.

Background: *Primary care has an important role in cardiovascular risk management and a minimum size of scale of primary care practices may be needed for efficient delivery of managing and diagnosis of cardiac diseases.*

Objectives: *this narrative review was aimed to discuss the prevention measures approaches to cardiac diseases, and the ability to prevent it in healthcare setting.*

Methodology: *A literature search was conducted using PubMed, CINAHL Plus, and PsycINFO. In PubMed the following search terms were used:, heart disease, chronic heart diseases, knowledge, prevention, management.*

Conclusion: *Variety of CVD patients in family medicine practice has very important location in morbidity overall number of health services users. Management CVD quality in family doctor team is acceptable, all signs are filled almost in huge portion, that's provides extremely acceptable avoidance CVD management and quality of clinical services. Medical care physicians need structured methods to detecting cardiac arrest; these approaches ought to involve stratifying patients into risk groups and assessing them with unbiased tests. In many cases, there is no immediate alternative to echocardiography to confirm the diagnosis and identify the etiology.*

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Please cite this article in press Safaa Anwar Felemban et al ***Review; Cardiac Disease Prevention Measures.,*** *Indo Am. J. P. Sci, 2022; 09(10).*

INTRODUCTION:

Cardiovascular disease (CVD) is a medical condition that specifically impacts the heart and blood vessels. It encompasses conditions such as high blood pressure, coronary cardiovascular disease (CHD), and heart failure (1). Approximately 82 million individuals in the United States are affected by various forms of cardiovascular disease (CVD). Chest discomfort accounts for 0.7% to 2.7% of client contacts in primary care (2). Nevertheless, the incidence of severe cardiac conditions, such as chronic stable coronary heart disease (CHD) or acute coronary syndrome (ACS), is rather rare in these patients. The prevalence of coronary heart disease in unselected patients presenting with chest discomfort in medical care ranges from 12.8% to 14.6% (2,3).

In Europe, cardiovascular diseases (CVD) account for 4.3 million fatalities annually, representing 48% of all causes of death (54% for females and 43% for males). European Community Countries (ECC) are responsible for 42% of deaths. Cardiovascular diseases (CVD) constitute the leading cause of death among males in Europe, except Spain, France, and the Netherlands (4). Ischaemic heart disorders are responsible for less than half of cardiovascular disease (CVD) deaths, while cerebrovascular illness accounts for one third of CVD mortality. Over the past three decades, there has been a significant decrease in mortality, incidence, and lethality of cardiovascular disease (CVD) in several European countries, particularly in Western and Southern Europe. However, in Eastern and Central Europe, there has been an increase in these rates. Countries with poor economic development (4,5) tend to have higher rates of cardiovascular disease.

Heart failure is an increasingly significant issue for primary care physicians in many healthcare systems in developed countries. The prevalence of the condition in older persons is nearly equivalent to that of diabetes mellitus, affecting at least 2% of the adult population and rising to 3% in individuals aged 75 years and beyond (6). While the occurrence of several cardiovascular diseases has decreased in the last two decades, the prevalence of heart failure has actually risen. This can be attributed to two factors: firstly, more individuals are surviving intense myocardial infarctions, and secondly, there is a growing population of elderly individuals. Accurately detecting heart failure in a clinical setting can be challenging. After evaluation, the medical diagnosis was confirmed for just 26% of customers who had suspected cardiac arrest and were referred to a fast access clinic for echocardiography. The diagnostic accuracy of health center physicians in clinical medicine is equally deficient (7).

Accurate and timely diagnosis is crucial in primary healthcare, but, individual symptoms and indications are never adequate for a reliable diagnosis of CHD. This problem can be resolved by implementing a predictive algorithm that integrates several symptoms, indicators, and other patient characteristics such as gender, age, and coronary risk factors.

METHODOLOGY:

A comprehensive literature search was performed utilizing the databases PubMed, CINAHL Plus, and PsycINFO. The search terms utilized in PubMed encompassed heart disease, chronic heart illnesses, healthcare, diagnosis, and preventive. The reference list of papers was also examined, found using the search approach, and only those deemed relevant were chosen. Included in this article are review papers and meta-analyses that have been carefully chosen for their ability to provide thorough and extensive overviews, which may include topics outside the scope of this article.

DISCUSSION:

A significant proportion of patients can avert cardiovascular problems. The World Health Organization (WHO) estimated that reducing blood pressure, obesity, cholesterol levels, and tobacco use at the population level can lead to a decrease of more than 50% in the incidence of cardiovascular disease (4). The action plan for avoiding cardiovascular disease (CVD) is established upon well-established objectives, chosen through a management approach and capacity enhancement to achieve them. The established strategies for leading cardiovascular disease (CVD) programs encompass a comprehensive set of goals: promoting heart health among the entire population, preventing CVD symptoms, promoting a tobacco-free lifestyle, encouraging regular physical exercise, mitigating risk factors for hypertension, reducing elevated lipid levels, combating abdominal obesity and diabetes, implementing specific diagnostic procedures, managing and treating CVD, implementing programs to prevent the recurrence of CVD, promoting a stress-free lifestyle, advocating for healthy eating habits, and creating a healthy and comfortable environment (8). The ultimate objective of these actions is to achieve a reduction in the frequency of morbidity and mortality from cardiovascular disease (CVD) by addressing the underlying risk factors and determinants. This includes developing effective strategies for managing CVD, monitoring trends in CVD, and addressing the

emerging threats associated with CVD in the modern world.

Diagnostic and prevention measures:

One possible drawback in using assistance for primary care diagnosis is the reliance on measuring brain natriuretic peptide levels in the plasma to evaluate patients. The data about the reliability of brain natriuretic peptide are conflicting. Brain natriuretic peptide testing demonstrated a sensitivity of 97%, a specificity of 84%, a positive predictive value of 70%, and a negative predictive value of 98% in a group of 106 patients with symptoms of recent start who were referred to a cardiac arrest clinic with expedited access (9). The peptide demonstrated comparable predictive efficacy in patients with confirmed left ventricular systolic dysfunction, the most prevalent cause of heart failure. This was observed in a study conducted in Glasgow, a region with high heart disease prevalence, which included 1653 adults aged 25 to 75 years (10). Another study published in the BMJ evaluated 155 elderly patients over the age of 75 in a medical care setting, and also reported similar predictive efficacy (11). Nevertheless, these research studies were conducted on a limited scale. For instance, a study involving 134 patients who had recovered from a heart attack found that brain natriuretic peptide may not accurately predict the presence of mild to moderate left ventricular systolic dysfunction when compared to normal heart function (McClure SJ et al, 20th Congress of the European Society of Cardiology, Vienna, 1998). In a recent study published in the BMJ, 126 patients from a basic practice were referred to an echocardiography center. The study found that adding brain natriuretic peptide to the standard investigations of electrocardiography and chest radiographs only provided a slight diagnostic advantage. However, it is worth noting that 1 in 7 patients received a false negative diagnosis. Fifteen However, these recent findings are in opposition to the negative predictive value of 98% mentioned in a related study on brain natriuretic peptide published in the same journal issue. The number is 14.

A significant proportion of consumers can prevent cardiovascular problems. The World Health Organization (WHO) projected that reducing high blood pressure, obesity, cholesterol levels, and tobacco use at the population level can cut the incidence of cardiovascular disease (CVD) by more than 50% (7). The action plan for avoiding cardiovascular disease (CVD) is established on well-established objectives, selected through a management strategy and the enhancement of capabilities to achieve them. The established approaches for leading cardiovascular disease (CVD) programs encompass a comprehensive set of objectives: promoting heart health across the entire population, preventing CVD symptoms, promoting a tobacco-free lifestyle, encouraging regular physical exercise, eliminating risk factors for hypertension, reducing elevated lipid levels, combating abdominal obesity and diabetes, implementing accurate diagnostic procedures, ensuring effective control and treatment of CVD, implementing programs to prevent the progression of CVD, promoting a stress-free lifestyle, advocating for healthy eating habits, and creating a healthy and conducive environment (4). The ultimate goal of these efforts is to achieve a global approach that reduces the frequency of morbidity and mortality from cardiovascular disease (CVD) by addressing the lower risks and determinants of CVD. In order to create logical and equitable advancements in controlling cardiovascular disease (CVD), it is necessary to closely monitor the trends of CVD and its associated risk factors in the current world (8,12).

Availability of diagnostic elements in healthcare setting:

In order to definitively diagnose heart failure in primary care, the majority of patients require a referral for cardiac imaging. A recent study conducted on a random sample of primary care physicians across six European countries revealed that only a small percentage of general practitioners had direct access to echocardiography, ranging from 5% in the Netherlands to 37% in the United Kingdom (9). The limited access to healthcare services can be attributed to a lack of qualified personnel to manage clinics, as well as concerns that granting primary care physicians direct access would lead to improper utilization. However, a study on open access echocardiography revealed that only 12% of the recommendations were deemed "inappropriate" (7,8).

Are there alternative diagnostic methods to echocardiography that can be used in primary care? A standard ECG typically fails to detect left ventricular dysfunction (10). However, it is important to note that any changes that occur may be very little, and the inability of medical care physicians to accurately read electrocardiograms may indicate the necessity for a specialist's evaluation.

An effective diagnostic tool in primary care is the evaluation of patients by measuring plasma levels of brain natriuretic peptide. Nevertheless, there is conflicting information regarding the reliability of brain natriuretic peptide. The screening of brain natriuretic peptide demonstrated a sensitivity of 97%,

a specificity of 84%, a positive predictive value of 70%, and a negative predictive value of 98% in a cohort of 106 patients presenting with recent onset symptoms who were sent to a heart failure clinic with expedited access. The peptide demonstrated similar predictive accuracy in individuals with confirmed left ventricular systolic dysfunction, the most prevalent cause of heart failure. This was observed in a study conducted in Glasgow, a region with high rates of heart disease, which included 1653 adults aged between 25 and 75 years. Another study published in the BMJ examined 155 elderly patients over the age of 75 who were screened in primary care. Nevertheless, these investigations were limited in scope. A research study involving 134 patients who had recovered from a heart attack revealed that brain natriuretic peptide may not be an effective predictor of the presence of mild to moderate left ventricular systolic dysfunction when compared to normal heart function. In a recent study published in the BMJ, it was found that adding brain natriuretic peptide to standard investigations of electrocardiography and chest radiographs did not provide significant diagnostic benefits for 126 patients in general practice who were referred to an echocardiography clinic. However, it is worth noting that 1 in 7 patients received a false negative medical diagnosis. However, these recent discoveries differ from the negative predictive value of 98% mentioned in a related study on brain natriuretic peptide published in the same issue.

In a research study, it was found that the majority of CVD indicators in medical services management are characterized by a low level. This indicates that while quality medical services management is good in the family physician group, there is room for improvement. Out of the newly admitted patients with angina pectoris, 51.72% were referred for ergometry or/and cardiologist evaluation. Additionally, 58.62% of the patients achieved high blood pressure readings of < 140/90. Only 27.58% of patients were able to obtain an overall cholesterol value of ≤ 5mmol/l, which is a very low percentage. It is crucial to focus on educating clients about adopting a healthy lifestyle, consuming nutritious food, and receiving better individual healthcare. In a comprehensive British nationwide research study on cardiovascular disease (CVD), high blood pressure, and stroke patients receiving excellent care in primary health care settings, it was found that 71.4% to 88.6% of clients who were newly diagnosed with arterial hypertension (AP) were referred for an ergo test or to a cardiologist. This approach proved to be more effective in accurately verifying and managing the diagnosis of AP (13).

68.96% of clients who had cardiovascular disease (CVD) assessment and had their patient files registered received aspirin treatment or an alternative anticoagulant therapy (excluding those with clear contraindications) within the past 15 months, as per established requirements. The minimum level of adherence was 25%, while the maximum level reached 90%. A research study (14) on CVD risk quality management in primary healthcare across several European nations found similar results. Specifically, 80% of patients with heart failure were receiving anticoagulant medication. The proportion of clients with cardiovascular disease (CVD) who received treatment with ß-blockers in the past 15 months was 79.31%. The indicator is filled, indicating an outstanding quality management therapy of cardiovascular disease (CVD) with a minimum level of 25% and a maximum level of 80%. According to a study conducted by Brenan et al., it was shown that a significant proportion of patients with severe myocardial infarction did not receive Aspirin or β-blockers. This negligence can have deadly consequences and incur expenses that exceed the value of a human life. Such errors can be attributed to irresponsible medical practices (15).

CONCLUSION:

A significant proportion of patients with cardiovascular disorders, which are noncontagious chronic conditions, receive treatment in basic healthcare settings. Family practitioners have a crucial role in managing cardiovascular risks. Given the inadequate level of preventative measures in our country, the findings of our study are deemed acceptable. The presence of a diverse range of cardiovascular disease (CVD) patients in a family medicine practice is significant in terms of the overall number of individuals utilizing health services and experiencing illness. The management of cardiovascular disease (CVD) quality in the family doctor team is satisfactory, as all indicators are mostly met to a significant extent. This ensures highly acceptable CVD management and quality of clinical services. Medical practitioners require systematic procedures for identifying cardiac arrest, which should include categorizing patients into risk groups and evaluating them using impartial testing. Echocardiography is often the only available method to promptly validate the diagnosis and determine the cause in several instances. The brain natriuretic peptide assay has significant promise in identifying individuals who should undergo echocardiography, since it can assist in both treatment and diagnostic prediction.

REFERENCES:

1. Imes CC, Lewis FM. Family history of cardiovascular disease, perceived cardiovascular disease risk, and health-related behavior: a review of the literature. J Cardiovasc Nurs. 2014;29(2):108-129. doi:10.1097/JCN.0b013e31827db5eb.
2. Verdon F, Herzig L, Burnand B, Bischoff T, Pecoud A, Junod M, Muhlemann N, Favrat B. Chest pain in daily practice: occurrence, causes and management. Swiss Med Wkly. 2008;138(23–24):340–347.
3. Bösner S, Becker A, Haasenritter J, Abu Hani M, Keller H, Sönnichsen AC, Karatolios K, Schaefer JR, Seitz G, Baum E. et al.Chest pain in primary care: epidemiology and pre-work-up probabilities. Eur J Gen Pract. 2009;15(3):141–146. doi: 10.3109/13814780903329528.
4. Beganlic A, Pavljasevic S, Kreitmayer S, et al. Qualitative Evaluation of Cardiovascular Diseases Management in Family Medicine Team in One Year Level. Med Arch. 2015;69(3):140-144. doi:10.5455/medarh.2015.69.140-144.
5. Anonymous. Copenhagen: WHO-Regional Office for Europe; 2006. Gaining Health, The European Strategy for the Prevention and Control of Noncommunicable Diseases. WHO.
6. Hobbs R. Can heart failure be diagnosed in primary care?. *BMJ*. 2000;321(7255):188-189. doi:10.1136/bmj.321.7255.188
7. Friedlander Y, Siscovick DS, Arbogast P, et al. Sudden death and myocardial infarction in first degree relatives as predictors of primary cardiac arrest. Atherosclerosis. 2002;162(1):211–216.
8. Lieshout van J, Grol R, Campbell S, Falcoff H, Capell EF, Glehr M, Goldfracht M, Kumpusalo E, Künzi B, Ludt S, Petek D, Vanderstighelen V, Wensin M. Cardiovascular risk management in patients with coronary heart disease in primary care: variation across countries and practices. An observational study based on quality indicators. BMC Family Practice. 2012;13:96.
9. Cowie MR, Struthers AD, Wood DA, Coates AJS, Thompson SG, Poole-Wilson PA, et al. Value of natriuretic peptides in assessment with patients with possible new heart failure in primary care. Lancet. 1997;350:1349–1353.
10. McDonagh TA, Robb SD, Murdoch DR, Morton JJ, Ford I, Morrison C, et al. Biochemical detection of left ventricular systolic dysfunction. *Lancet* 1998:9-13
11. Smith H, Pickering RM, Struthers A, Simpson I, Mant D. Biochemical diagnosis of ventricular dysfunction in elderly patients in general practice: observational study. BMJ. 2000;320:906–908.
12. Saxen S, Car J, Eldred D, Soljak M, Majeed A. Practice size, caseload, deprivation and quality of care of patients with coronary heart disease, hypertension and stroke in primary care: national cross-sectional study. BMC Health Services Research. 2007;7:96.
13. Anonymous. Akreditacijski standardi za timove Porodične/Obiteljske medicine. Sarajevo: AKAZ; 2012. Agencija za kvalitet i akreditaciju u zdravstvu u FBiH.
14. Lieshout van J, Grol R, Campbell S, Falcoff H, Capell EF, Glehr M, Goldfracht M, Kumpusalo E, Künzi B, Ludt S, Petek D, Vanderstighelen V, Wensin M. Cardiovascular risk management in patients with coronary heart disease in primary care: variation across countries and practices. An observational study based on quality indicators. BMC Family Practice. 2012;13:96.
15. Brennan TA, Leape LL, Laird NM, et al. Incidence of adverse events and negligence in hospitalized patients. Results of the Harvard Medical Practice Study I. N Engl J Med. 1991;324:370–376.