

Cardiovascular Patients' Risk Status and the Management of Their Prevention Programme in Family Practice; Overview

¹Abdullah Sulaiman ALdhuwyan, ²Tameem Abdulaziz Alhomaïd,
³Suliman Ali Almerdasy, ⁴Nasser Saleh Alwashmi, ⁵Abdullah Ahmad Al-Hudaib,
⁶Abdulhameed Ali H Aloraini

Abstract: Cardiovascular disease (CVD) is among the leading root causes of death and morbidity globally. We aimed by this overview to evaluate the cardiovascular risk management programmed in primary care worldwide, we also attempted to discuss the prevention programs that could in family practice which increase the life quality for patients with CVD. We conducted this overview study through electronic search of several databases; PubMed (MEDLINE), EMBASE, and Google Scholar, up to November 2016, we restricted our search to English language articles, and we included all types of studies such Randomized control trials, reviews, that discussing the management of CVD in primary care. despite the advantages showed for handling cardiovascular risks, gaps stay in primary care specialists' management of dangers according to guideline suggestions. Ingenious academic methods are needed to resolve barriers, and target particular groups of physicians to help with the implementation of guideline-based recommendations in CVD management.

Keywords: Cardiovascular disease (CVD), MEDLINE, EMBASE, and Google Scholar.

1. INTRODUCTION

Cardiovascular disease (CVD) is among the leading root causes of death and morbidity globally ⁽¹⁾. In 2001, about one third of mortalities around the world were attributable to CVD and it is forecasted to become the leading cause of death in established countries ^(1,2). In the USA, CVD represent 35.2% of mortality compared to 48% in Europe ^(1,3).

Examining risk of CVD has become a simple way of targeting intervention approaches at those who are asymptomatic but at high risk of developing CVD ⁽⁴⁾. Multivariate threat functions stemmed from huge scale accomplice studies as well as RCT's form the basis of these predictive ratings ^(5,6,7,8).

Proof for the efficiency of sustained behaviour modification adhering to separately customized multifactorial interventions in the key prevention of CVD is sparse. Unifactorial Interventions targeted at reducing risk factors such as smoking cigarettes have actually shown successful ⁽⁹⁾, however there is a demand for further assessment of multifactorial treatments ⁽⁹⁾.

In England during 2009, the Department of Health presented the 'NHS Health Check' program, focused on analyzing people aged 40- 74 for their CVD danger adhered to by proper treatments and management in high-risk people ^(10,12). This method of recognizing and treating people at the greatest danger has proved successful in handling the progression and protecting against of various other persistent diseases ⁽¹³⁾.

A significant part of both additional and also main prevention of CVD could adequately be supplied at the medical care level. Wellness specialists should pay unique attention to the analysis of cardiovascular risk elements ^(14,15). Several of the threat factors are made use of in threat calculations to examine the private outright cardiovascular danger score ^(16,17). The individual risk is the beginning point for the growth of avoidance techniques. It has actually currently been argued that patients at high danger of CVD will benefit most from prevention strategies ⁽¹⁸⁾.

We aimed by this overview to evaluate the cardiovascular risk management programmed in primary care worldwide, we also attempted to discuss the prevention programs that could in family practice which increase the life quality for patients with CVD.

2. METHODOLOGY

We conducted this overview study through electronic search of several databases; PubMed (MEDLINE), EMBASE, and Google Scholar, up to November 2016, we restricted our search to English language articles, and we included all types of studies such Randomized control trials, reviews, that discussing the management of CVD in primary care.

3. RESULTS & DISCUSSION

Recognized conventional risk aspects for CVD consist of age, sex, family history, high blood pressure, dysglycemia, dyslipidemia, and smoking. More recent cardiovascular threat aspects consist of stomach weight problems (determined by waist circumference), insulin resistance, swelling as determined by high-sensitivity C-reactive protein (hsCRP) levels, absence of intake of veggies and fruits, sedentary lifestyle, and psychosocial stress. While conventional specifications are routinely assessed in the center, waist circumference ought to be added to the regular evaluation of cardiovascular danger. In patients whose triglyceride levels rise, an apolipoprotein B measurement can replace that of low-density lipoprotein cholesterol (LDL-C) for the purpose of danger evaluation and management of CMR^(20,21,22).

Evidence based:

Efforts are being included examine ways to efficiently manage danger elements for CVD and also to improve medical treatments for the disease. In some nations these initiatives have been rewarded with decreases in CVD mortality, as seen in most Northern, Southern, and also Western European nations⁽²⁰⁾. An example of a successful community-based treatment strategy was started in the North Karelia province of Finland in 1972^(21, 22, 23). The interventions aimed to alter target risk aspects as well as health and wellness actions (product cholesterol, high blood pressure, smoking, diet plan) at the population degree. In the very early 1970s middle-aged Finnish men had the highest death from CVD on the planet, however because this avoidance program was started the mortality price reduced drastically; from 1969- 1971 to 1995 the age-standardized coronary cardiovascular disease (CHD) death (each 100,000) reduced in North Karelia by 73%⁽²³⁾.

Despite initiatives to minimize the danger of CVD amongst a threat Americans, current observation and survey researches reveal that substantial spaces in knowledge as well as application of standard referrals for risk reduction remain^(27,28,29). An essential variable in correct CVD threat administration is accurate danger evaluation; nonetheless, inconsistencies amongst present techniques for calculating danger⁽²⁹⁾ as well as the perception of danger amongst health care companies contribute to obstacles in threat evaluation^(30,31).

In many areas, decreases are not as excellent or on the other hand the frequency of CVD is increasing. Since the disease continues to be unrestrained on a global range, worldwide increases in CVD occasions are anticipated. There is, as a result, an essential need to find ways to blunt the worldwide increase in CVD predicted for honest years⁽⁴⁵⁾.

What may be surprising is that we currently possess the understanding as well as the tools to dramatically minimize the concern of CVD danger. Successfully implementing the therapy guidelines, diagnostic tools, healing treatments, and also management programs that exist for CVD somehow still handles to escape us. Among the reasons for this include the increasing number of people embracing lifestyles that are at chances with preserving an acceptable CVD danger^(3,4), elements of which might include inadequate diet, cigarette smoking, as well as physical lack of exercise.

The management of CVD is presently in a state of makeover. In the past, the management procedure has centered on the adjustment of solitary threat elements, such as high blood pressure. Nonetheless, there have been repeated calls to relocate away from this siloes method^(47, 48) as well as many treatment guidelines currently recommend at the same time taking on way of life and also restorative interventions targeted at numerous danger factors^(49,50). This adjustment of understanding assures to have a favorable impact on the success of treatment for the disease.

Management approaches of risk of CVD:

life style modifications should be pursued for 3 to 6 months in all patients prior to add-on pharmacotherapy is considered, unless patients are at high risk. The best health enhancements take place amongst patients with the worst cardiometabolic disruptions, and sustained efforts are needed to keep cardiovascular benefits⁽⁵¹⁾. Hence, the value of continuing health behaviour change should be worried to the patient even if pharmacotherapy has been initiated.

Finally, two includedof research studies ^(52,53) supplies a comprehensive treatment algorithm for patients with increased CMR. Of all, start statin treatment in parallel with initiation of behavioural adjustments in patients who are at high threat (more than 20% CVD threat over the next 10 years). Those at intermediate threat (10% to 19% CVD danger in the next 10 years) with LDL levels greater than 3.4 mmol/L or hsCRP levels greater than 2.0 mg/L (in men older than age 50 or ladies older than age 60) must likewise receive statins after a trial of lifestyle adjustment. The goal is to attain the target LDL-C level (< 2.0 mmol/L or a decline of present LDL-C level by $\geq 50\%$) or an apolipoprotein B level less than 0.8 g/L ⁽⁵⁴⁾. Second, in patients with prediabetes (impaired fasting glucose or impaired glucose tolerance), weight loss and increased exercise is the favored method to preventing or postponing onset of diabetes, however pharmacotherapy can also be considered. Metformin is the favored pharmacologic therapy for patients with prediabetes or diabetes after 3 to 6 months of behaviour modification have cannot attain the wanted results. Progressively more aggressive antihyperglycemic treatment will be required to keep optimum glycemic levels in patients with diabetes. Finally, antihypertensive therapy needs to be initiated after proper assessment as suggested by the 2011 Canadian Hypertension Education Program medical practice standards ⁽⁵²⁾.

4. CONCLUSION

Despite the advantages showed for handling cardiovascular risks, gaps stay in primary care specialists' management of dangers according to guideline suggestions. Ingenious academic methods are needed to resolve barriers, and target particular groups of physicians to help with the implementation of guideline-based recommendations in CVD management.

REFERENCES

- [1] World Health Organisation. World Health Report 2002. Reducing Risks and Promoting Healthy Life. Geneva, 2002.
- [2] American Heart Association Statistics Writing Group. Heart Disease and Stroke Statistics–2008 Update: A Report From the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation* 2008;117:e25–146.
- [3] World Health Organisation. European cardiovascular disease statistics 2008 Chapter 1: Mortality. Geneva, 2008.
- [4] Brindle P, Beswick A, Fahey T, Ebrahim S Accuracy and impact of risk assessment in the primary prevention of cardiovascular disease: a systematic review. *Heart* 2006;92:1752–59.
- [5] Anderson K, Odell P, Wilson P, Kannel W Cardiovascular disease risk profiles. *American Heart Journal* 1991;121:293–98.
- [6] Assman G, Cullen P, Schulte H Simple scoring scheme for calculating the risk of acute coronary events based on the 10 year follow up of the prospective cardiovascular Munster (PROCAM) study. *Circulation* 2002;105:310–15.
- [7] Wilson PF, D'Agostino R, Levy D, Belanger A, Silbershatz H, Kannel W Prediction of coronary heart disease using risk factor catagories. *Circulation* 1998;97:1837–47.
- [8] Hippisley-Cox J, Coupland C, Robson J, Sheikh A, Brindle P Predicting risk of type 2 diabetes in England and Wales: prospective derivation and validation of QDScore. *BMJ* 2009;338:b880.
- [9] Parkes G, Greenhalgh T, Griffin M, Dent R Effect on smoking quit rate of telling patients their lung age: the Step2quit randomised controlled trial. *BMJ* 2008;336:598.
- [10] Department of Health. Putting prevention first – vascular checks: risk assessment and management. Annex 1: options stage impact assessment for vascular risk assessments, 2008.
- [11] Patel K, Minhas R, Gill P, Khunti K, Clayton R Vascular risk checks in the UK: strategic challenges for implementation. *Heart* 2009;95:866–67.
- [12] Kulzer BH, Gorges N, Schwarz D, Haak P Prevention of Diabetes Self-Management Programme (PREDIAS): Effects on Weight, Metabolic Risk Factors and behavioural Outcomes. *Diabetes Care* 2009;32:1143–46.

- [13] Spijkerman A, Dekker J, Nijpels G, et al. Microvascular Complications at Time of Diagnosis of Type 2 Diabetes Are Similar Among Diabetic Patients Detected by Targeted Screening and Patients Newly Diagnosed in General Practice: The Hoorn Screening Study. *Diabetes Care* 2003;26:2604–8.8.
- [14] De Backer G, Ambrosioni E, Borch-Johnsen K, et al. European guidelines on cardiovascular disease prevention in clinical practice: third joint task force of European and other societies on cardiovascular disease prevention in clinical practice. *Eur J Cardiovasc Prev Rehabil*. 2003;10(4):S1–S10.
- [15] Dutch Institute for Healthcare Improvement (CBO) and Dutch College of General Practitioners (NHG) Dutch guideline for cardiovascular risk management. Utrecht: Dutch Institute for Healthcare Improvement CBO and Dutch College of General Practitioners; 2006.
- [16] Anderson KM, Wilson PW, Odell PM, Kannel WB. An updated coronary risk profile. A statement for health professionals. *Circulation*. 1991;83(1):356–362.
- [17] Conroy RM, Pyorala K, Fitzgerald AP, et al. Estimation of ten-year risk of fatal cardiovascular disease in Europe: the SCORE project. *Eur Heart J*. 2003;24(11):987–1003.
- [18] Assmann G, Cullen P, Schulte H. Simple scoring scheme for calculating the risk of acute coronary events based on the 10-year follow-up of the prospective cardiovascular Munster (PROCAM) study. *Circulation*. 2002;105(3):310–315.
- [19] Wood D, De Backer G, Faergeman O, et al. Prevention of coronary heart disease in clinical practice. Summary of recommendations of the Second Joint Task Force of European and other Societies on Coronary Prevention. *J Hypertens*. 1998;16(10):1407–1414.
- [20] Rayner M. *European Cardiovascular Disease Statistics*. 2000.
- [21] Puska P, editor. *Comprehensive cardiovascular community control programmes in Europe*. Copenhagen: WHO Regional Office for Europe; 1988. EURO Reports and Studies 106.
- [22] Vartiainen E, Puska P, Pekkanen J, et al. Changes in risk factor explain changes in mortality from ischaemic heart disease in Finland. *BMJ*. 1994;309:23–7.
- [23] Puska P, Vartiainen E, Tuomilehto J, et al. Changes in premature deaths in Finland: successful long-term prevention of cardiovascular diseases. *Bull World Health Organ*. 1998;76:419–25.
- [24] American Heart Association/American College of Cardiology Guidelines. American Heart Association and American College of Cardiology Websites. <http://www.acc.org/qualityandscience/clinical/topic/topic.htm#P>.
- [25] Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo JL, Jones DW, Materson BJ, Oparil S, Wright JT, Roccella EJ, National Heart, Lung, and Blood Institute Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, National High Blood Pressure Education Program Coordinating Committee: The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: the JNC 7 report. *JAMA*. 2003, 289: 2560-2572. 10.1001/jama.289.19.2560.
- [26] Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults: Third report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III): Final Report. *Circulation*. 2002, 106: 3143-3421.
- [27] Asch SM, Kerr EA, Keeseey J, Adams JL, Setodji CM, Malik S, McGlynn EA: Who is at greatest risk for receiving poor-quality healthcare?. *N Engl J Med*. 2006, 354: 1147-1156. 10.1056/NEJMsa044464.
- [28] Davidson MH, Maki KC, Pearson TA, Pasternak RC, Deedwania PC, McKenney JM, Fonarow GC, Maron DJ, Ansell BJ, Clark LT, Ballantyne CM: Results of the National Cholesterol Education Program Evaluation Project utilizing novel E-technology (NEPTUNE) II survey and implications for treatment under the recent NCEP Writing Group recommendations. *Am J Cardiol*. 2005, 96: 556-563. 10.1016/j.amjcard.2005.04.019.
- [29] Assmann G: Calculating global risk: the key to intervention. *Eur Heart J Suppl*. 2005, 7: F9-F14. 10.1093/eurheartj/sui037.
- [30] Christian AH, Mills T, Simpson SL, Mosca L: Quality of cardiovascular disease preventive care and physician/

- practice characteristics. *J Gen Intern Med.* 2006, 21: 231-237. 10.1111/j.1525-1497.2006.00331.x.
- [31] Correa-de-Araujo R, Stevens B, Moy E, Nilasena D, Chesley F, McDermott K: Gender differences across racial and ethnic groups in the quality of care for acute myocardial infarction and heart failure associated with comorbidities. *Womens Health Issues.* 2006, 16: 44-45. 10.1016/j.whi.2005.04.003.
- [32] Goff DC, Bertoni AG, Kramer H, Bonds D, Blumenthal RS, Tsai MY, Psaty BM: Dyslipidemia prevalence, treatment, and control in the Multi-Ethnic Study of Atherosclerosis (MESA): gender, ethnicity, and coronary artery calcium. *Circulation.* 2006, 113: 647-656. 10.1161/CIRCULATIONAHA.105.552737.
- [33] Hajjar I, Miller K, Hirth V: Age-related bias in the management of hypertension: a national survey of physicians' opinions on hypertension in elderly adults. *J Gerontol A Biol Sci Med Sci.* 2002, 57: M487-491.
- [34] Henderson SO, Bretsky P, DeQuattro V, Henderson BE: Treatment of hypertension in African Americans and Latinos: the effect of JNC VI on urban prescribing practices. *J Clin Hypertens (Greenwich).* 2003, 5: 107-112. 10.1111/j.1524-6175.2003.01486.x.
- [35] Massing MW, Foley KA, Carter-Edwards L, Sueta CA, Alexander CM, Simpson RJ: Disparities in lipid management for African Americans and Caucasians with coronary artery disease: a national cross-sectional study. *BMC Cardiovasc Disord.* 2004, 4: 15-10.1186/1471-2261-4-15.
- [36] Mehta SS, Wilcox CS, Schulman KA: Treatment of hypertension in patients with comorbidities: results from the study of hypertensive prescribing practices (SHyPP). *Am J Hypertens.* 1999, 12: 333-340.
- [37] Oparil S, Miller AP: Gender and blood pressure. *J Clin Hypertens (Greenwich).* 2005, 7: 300-309. 10.1111/j.1524-6175.2005.04087.x.
- [38] Raji MA, Kuo YF, Salazar JA, Satish S, Goodwin JS: Ethnic differences in antihypertensive medication use in the elderly. *Ann Pharmacother.* 2004, 38: 209-214.
- [39] Sonel AF, Good CB, Mulgund J, Roe MT, Gibler WB, Smith SC, Cohen MG, Pollack CV, Ohman EM, Peterson ED, CRUSADE Investigators: Racial Variations in Treatment and Outcomes of Black and White Patients With High-Risk Non-ST-Elevation Acute Coronary Syndromes: Insights From CRUSADE. *Circulation.* 2005, 111: 1225-1232. 10.1161/01.CIR.0000157732.03358.64.
- [40] Hyman DJ, Pavlik VN: Self-reported hypertension treatment practices among primary care physicians: blood pressure thresholds, drug choices, and the role of guidelines and evidence-based medicine. *Arch Intern Med.* 2000, 160: 2281-2286. 10.1001/archinte.160.15.2281.
- [41] World Hypertension League calls for urgent action to get more hypertensive patients to goal. *Hypertension News.* May 12, 2006.
- [42] Borzecki AM, Oliveria SA, Berlowitz DR: Barriers to hypertension control. *Am Heart J.* 2005, 149: 785-794. 10.1016/j.ahj.2005.01.047.
- [43] Phillips LS, Branch WT, Cook CB, Doyle JP, El-Kebbi IM, Gallina DL, Miller CD, Ziemer DC, Barnes CS: Clinical Inertia. *Ann Intern Med.* 2001, 135: 825-834.
- [44] Murray CJ, Lopez AD. Alternative projections of mortality and disability by cause 1990–2020: Global Burden of Disease Study. *Lancet.* 1997;349:1498–504.
- [45] Chobanian AV, Bakris GL, Black HR, et al. The seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure: The JNC 7 Report. *JAMA.* 2003;289:2560–72.
- [46] [AHA] American Heart Association. International cardiovascular disease statistics. Dallas, Texas: American Heart Association; 2003.
- [47] Ansell BJ. Evidence for a combined approach to the management of hypertension and dyslipidemia. *Am J Hypertens.* 2005;18:1249–57.
- [48] Giles TD, Berk BC, Black HR, et al. Expanding the definition and classification of hypertension. *J Clin Hypertens.* 2005;7:505–12.

- [49] De Backer G, Ambrosioni E, Borch-Johnsen K, et al. European guidelines on cardiovascular disease prevention in clinical practice. Third Joint Task Force of European and Other Societies on Cardiovascular Disease Prevention in Clinical Practice. *Eur Heart J*. 2003;24:1601–10.
- [50] Joint British Societies. JBS 2: Joint British Societies' guidelines on prevention of cardiovascular disease in clinical practice. *Heart*. 2005;91(Suppl 5):v1–v52.
- [51] Leiter LA, Fitchett DH, Gilbert RE, Gupta M, Mancini GB, McFarlane PA, et al. Identification and management of cardiometabolic risk in Canada: a position paper by the Cardiometabolic Risk Working Group (executive summary) *Can J Cardiol*. 2011;27(2):124–31.
- [52] Hypertension Canada [website] Recommendations. Markham, ON: Canadian Hypertension Education Program; 2011. Available from: www.hypertension.ca/chep-recommendations.
- [53] Canadian Diabetes Association Clinical Practice Guidelines Expert Committee Canadian Diabetes Association 2008 clinical practice guidelines for the prevention and management of diabetes in Canada. *Can J Diabetes*. 2008;32 (Suppl 1):S1–201.
- [54] Genest J, McPherson R, Frohlich J, Anderson T, Campbell N, Carpentier A, et al. 2009 Canadian Cardiovascular Society/Canadian guidelines for the diagnosis and treatment of dyslipidemia and prevention of cardiovascular disease in the adult—2009 recommendations. *Can J Cardiol*. 2009;25(10):567–79.