Editorial

Overcoming High Cardiovascular Disease Burden in Indonesia: The Importance of Massive Cardiovascular Disease Risk Factor Screening, Aggressive Guideline-Directed Treatment, and Community-Based Programs

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ABSTRACT

Indonesia is a developing country with a large number of populations. Cardiovascular disease (CVD) is a serious public health concern in Indonesia because of its high burden. Moreover, the high-risk CVD patients were under treatment. Optimal CVD prevention can be the solution to this issue. In this paper, we are talking mainly about the role of massive CVD risk factor screening, precise risk stratification, aggressive guideline-directed treatment, and community-based programs in reducing the CVD burden.

Indonesia, with a population of 271.6 million, is the fourth most populous country in the world and has witnessed remarkable economic expansion over the past few decades.[1] Indonesia is undergoing a rapid epidemiological change in terms of its existing and predicted disease burden as a likely consequence of its economic development. The burden of non-communicable diseases is a serious public health concern in Indonesia. In Indonesia, approximately one-third of all deaths are attributed to cardiovascular diseases (CVD), with coronary artery disease (CAD) and stroke as the major causes of death.[2] Like most low- and middle-income countries in the Asia-Pacific region, the prevalence of major risk factors for CVD, such as obesity, diabetes, and hypertension, has increased in the Indonesian population.[3] High CVD risk is prevalent in over-40-year-old Indonesian adults, and rates of preventative treatment are low.[4] The other important issue is the high mortality rate for acute coronary syndromes (ACS). In Indonesia, all patients diagnosed with ACS had an in-hospital death rate of 10.6%.[5] Nonetheless, this figure is more than the in-hospital death rate in other Asia-Pacific countries (5%),[6] as well as Western countries (2.6% to 6.2%).[7]

CVD prevention is described as a population-level or individual-level coordinated collection of interventions to avoid or decrease the impact of CVD and its related disabilities. Prevention should be provided at two levels. First, prevention can be delivered at the population level by promoting healthy lifestyles. Second, at the individual level, for example, in people at moderate to high risk of CVD or in patients with established CVD, prevention can be conducted by stopping unhealthy lifestyles (smoking, physical inactivity, atherogenic diet) and optimizing risk factors. At least 80% of CVDs could be prevented by eliminating health-risk behaviors.[8] Some demographic interventions have effectively altered people's lifestyles. For instance, a greater understanding of how healthy lifestyles prevent CVD has reduced smoking and cholesterol levels. Before or in conjunction with pharmacological therapy, lifestyle modifications targeting several CV risk factors should be utilized. In addition, regulations targeted at cigarette smoking and reducing the trans-fatty acid and sodium content in food products are cost-effective in preventing CVD.[9,10]

Screening and managing risk factors for CVD are crucial components in preventing CVD.[11] Numerous studies have proven the benefits of risk factor management and have significantly influenced national and international health strategies for CVD prevention.[12-14] Generally, CVD risk factors are classified into modifiable and non-modifiable risk factors. The non-modifiable risk factors include older age, male gender, and family history of CVD. We cannot do anything about these risk factors. However, well-controlled modifiable risk factors can alter the natural history of CVD itself. Cigarette smoking, high-cholesterol diet, physical inactivity, hypertension, diabetes mellitus, hyperlipidemia, and overweight/obesity belong to the modifiable CVD risk factors.[8] This CVD risk factor screening should be completed by all physicians as part of a thorough patient evaluation.

Various CVD risk evaluation tools are available for use in apparently healthy persons, such as Framingham,[15] CUORE,[16] PROCAM,[17] QRISK1,[18] QRISK2,[19] ASSIGN,[20] and SCORE.[21] However, the current guideline from the European Society of Cardiology (ESC) strongly recommends total CVD risk assessment using SCORE for individuals aged at least 40 years old unless they have been classified as high-risk or very high-risk according to the documented CVD, kidney disease, diabetes mellitus, or a significantly higher risk factor.[8] The SCORE system assesses the first fatal atherosclerotic event risk occurring within 10 years. The components of the SCORE system include gender, total cholesterol level, systolic blood pressure, cigarette smoking status, and age.[21] This scoring system is user-friendly and can be applied by all physicians in daily clinical practice from primary to tertiary healthcare centers in Indonesia. The patients can be classified into low-, moderate-, high-, and- very high-risk persons if the total SCORE is less than 1%, between 1% to 5%, between 5 to 10%, and more than equal to 10%, respectively.[8,22]

Aggressive guideline-directed treatment for CVD risk factors is mandatory and has to be well-recognized by all physicians in Indonesia. The dangers of cigarette smoking exhibit a dose-response association with no minimum threshold for adverse effects. Current guidelines recommend no active or passive exposure to any form of tobacco. A diet low in saturated fat that emphasizes wholegrain items, vegetables, fruit, and seafood is strongly advised. A minimum of 75 minutes a week of vigorous aerobic exercise (15 minutes for 5 days/week), 150 minutes a week of moderate aerobic exercise (30 minutes for 5 days/week), or a combination of both has to be performed in a routine manner. Waist circumference has to be maintained below 80 cm and 94 cm for females and males, respectively. Moreover, keeping body mass index (BMI) around 20 to 25 kg/m2 is strongly recommended. The blood pressure and glycated hemoglobin (HbA1c) have to be maintained below 140/90 and 7%, respectively.[8,22,23] However, for managing hyperlipidemia, individual and specific lipid panel-based approaches are needed. Actually, for triglycerides and high-density lipoprotein cholesterol (HDL-C), there are no specific targets. However, achieving a high HDL-C level above 40mg/dL for male and above 45 mg/dL in females show a lower risk. Below 150 mg/dL, triglyceride level suggests a lesser risk, while levels above 150 mg/dL indicate the need to investigate additional risk factors.[8] The low-density lipoprotein cholesterol (LDL-C) has to be decreased to <116 mg/dL, <100 mg/dL, <70 mg/dL, and <55 mg/dL for persons with low-, moderate-, high-, and very high- risk for CVD.[22]

The role of community-based prevention-rehabilitation programs and the CVD community needs to be appreciated. Community-based interventions have successfully improved CVD risk factors, specifically by decreasing blood pressure, LDL-C level, triglyceride level, BMI, and blood sugar level. The effect of these programs on CVD varies by intervention type, cultural, and physical context.[24] By joining the CVD community, people can share information and their own experience with each other regarding their experiences having CVD. A cohort study including CAD patients revealed that community-based cardiac rehabilitation programs provided better adherence to the treatment and quality of life and reduced rehospitalization rate.[25]

In conclusion, CVD is still the leading public health issue in Indonesia because of its high burden. The massive CVD risk factor screening, precise risk stratification, aggressive guideline-directed treatment, and community-based programs can be the way to solve this problem. All physicians, nurses, healthcare workers, patients, and stakeholders have to work together to resolve this problem.

Conflict of Interest

There is no conflict o interest

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