

Risk Factors Analyses Correlating with Productive Age Population Coronary Heart Disease in Manado and Tomohon

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Abstract

Background: Cardiovascular diseases remain the leading cause of death in the world relating to illness. Every year, more people die from cardiovascular cause than any other diseases. The etiology of a heart attack is a combination of multiple risk factors. We found from 2013 Regional Health Research (Riskedas) that the province with the highest prevalence of coronary heart disease is Central Sulawesi followed by North Sulawesi. The numbers of incidence increase every year due to the abundant risk factors in the population in those provinces.

Aim: The aim of this study is to find a way of preventing and eradicating early incidence of coronary heart disease especially in the productive age population. It is necessary to acknowledge the most influential risk factor to suppress the incidence of coronary heart disease.

Method: This is an analytic observational epidemiology study conducted by the North Sulawesi Health Department and Public health Faculty of Sam Ratulangi University with a case control design and retrospective approach. The study was conducted at 7 hospitals (5 in Manado and 2 in Tomohon) between May-July 2017. We use non-probability sampling with the data collection technique of purpose sampling. There are 2 groups of respondents, 70 case respondents and 70 control respondents. Univariate, bivariate (chi square) and multivariate (logistic regression) were used to analyze the data in this study.

Result: There were a total of 140 respondents both in case and control groups with both groups have more male respondents than female ones (58.6% and 54.3% respectively). Most respondents in both groups are 45 years or older (87.1% in case respondents and 80% in control respondents). From the level of education variable, 45.7% case respondents are junior high school (SMP) graduates and 28% control respondents are senior high school (SMA) graduates. In occupation variable, 31.4% in case respondents are unemployed while 16% in control respondents are entrepreneurs. There were no significant difference in certain risk factors variables such as hypertension, diabetes mellitus, alcohol consumption and physical activity in both groups. However, in other risks factors stratification, the case respondents always have higher numbers than the control ones; heart disease familial history (65.7% vs 35.7%), smoking (64.3% vs 35.7%), unhealthy food intake (55.7% vs 28.6%). Using bivariate analysis, it was shown that familial history, smoking and unhealthy food intake have 3 times higher incidence rate to develop coronary heart disease. It was also shown that person with hypertension has twice the risk of having a coronary heart disease ($p < 0.05$). We found from multivariate analysis that the most influential risk factor correlating with coronary heart disease incidence was heart disease familial history with OR 2.97 (95% CI=1.41-6.29)

Conclusion: People who have risk factors such as heart disease familial history, hypertension, smoking and unhealthy food intake have increased risks of developing coronary heart disease incidence compared to those who do not. It is important that every hospital should enhance its retrospective approach in dealing with coronary heart disease risk factors. Coronary heart disease incidence prevention is necessary and therefore, cooperation between hospital and the health department to educate and provide information on how to live a healthy life style, to promote the importance of heart gymnastic exercise at least 3 times a week so the society can minimize the risk of having a heart disease is fundamental.