ICOH

by Putri Handayani

Submission date: 20-Dec-2022 06:29PM (UTC+0700)
Submission ID: 1984988129
File name: ICOH_2019_Putri_Handayani_Devi.pdf (297.32K)
Word count: 1927
Character count: 10169

Analysis of Factors Relating to the Event of Dyslipidemia in Oil and Gas Workers

Putri Handayani and Fierdania Yusvita
Department of Public Health, Universitas Esa Unggul, Jl. Arjuna Utara No 9, Jakarta, Indonesia

Keywords: Dyslipidemia, Occupational Health, HDL, Cholesterol, Work Promotion.

Abstract: Dyslipidemia is a health disorder that is often found in workers in the oil and gas mining industry. Workers have a huge potential to experience the risk of cardiovascular disease because several factors in the work environment can affect health. The purpose of this study was to determine the factors associated with the incidence of dyslipidemia in workers at PT X. This research method uses a cross-sectional study. The population of this study is the workers who served on Ship A, amounting to 45 people. The statistical test used is the Chi-Square test. Based on the results of the study found that, there is no relationship of LDL (p-value = 1,000), triglycerides (p-value = 0.135), BMI (p-value = 1,000), smoking status (p-value = 0.704), hypertension status (p-value = 0.699) with the incidence of dyslipidemia and there is a relationship between HDL (p-value = 0.006), obese (p-value = 0,025) and cholesterol (p-value = 0.001) with the incidence of dyslipidemia. Researchers suggest that companies are expected to be able to revitalize work promotion programs in the workplace.

1 INTRODUCTION

Dyslipidemia is a disorder of lipoprotein metabolism in the form of overproduction or lipoprotein deficiency. This disorder can be manifested by an increase in total serum cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), and triglyceride concentrations, and a decrease in lipoprotein protein (HDL-C) high-density concentration. This is a major risk factor for coronary heart disease (CHD), the leading cause of death worldwide (American Heart Association, 2004).

The Increasing prevalence of dyslipidemia has become a worldwide public health problem (Qi et al., 2015). Dyslipidemia occurs due to several factors one of which is lifestyle changes. Dyslipidemia can be experienced by anyone without knowing a social or educational status. Dyslipidemia can cause several effects on workers such as type 2 diabetes (Jayarama and Lakshmaiah, 2012; Zhou et al., 2014), atherosclerosis (Snehalatha et al., 201), stroke (Djelilovic-Vranic et al., 2013) and cardiovascular diseases (Stamler et al., 2000; Vergani and Lucchi, 2012). Factors that trigger dyslipidemia include age (WHO, 2007), smoking (WHO, 2007), body mass index (WHO, 2007; Basheikh, 2016), hypertension (Lopez, 2006), HDL, LDL, triglycerides, and total cholesterol (Basheikh), 2016).

PT. X is a company engaged in the oil and gas sector. The results of research conducted at this company in 2017 showed that the proportion of workers with dyslipidemia status was 82.2% with the total workers at risk of cardiovascular disease of 51.1%. Until 2008 it was reported that cases of death due to Coronary Heart Diseases (CHD) increased by 30% in this company. Furthermore, in 2009 it was reported that the proportion of active workers who died due to CHD at PT X was as much as 40%. Based on the results of periodic health checks conducted at the company, in 2004-2016 there was an increase in risk factors for dyslipidemia such as BMI, cholesterol, and glucose above the normal limit in workers. The proportion of workers with high total cholesterol (>200 mg/dL) was 64.1%, workers with a BMI >25 kg/m2 were 42.3%, and workers with impaired glucose were 13.8%. Also, as many as 7.3% of workers have a history of hypertension (blood pressure >140/90 mmHg) and 43.2% of workers are active smokers (Health Dept. PT X, 2016). Therefore, this study aimed to determine the factors associated with the incidence of dyslipidemia in workers at PT X.

Handayani, P. and Yusvita, F.
Analysis of Factors Relating to the Event of Dyslipidemia in Oil and Gas Workers.
DOI: 10.5220/0009594903170319
In *Proceedings of the 1st International Conference on Health (ICOH 2019)*, pages 317-319
ISBN: 978-989-758-454-1
Copyright © 2020 by SCITEPRESS – Science and Technology Publications, Lda. All rights reserved

2 METHOD

This quantitative research uses a non-experimental design. The sample of this research is 45 workers who are all workers who work on Ship A. Data collection is done cross-sectionally using secondary data. Data analysis is performed using computer software, univariate analysis is performed to see the frequency distribution of each variable. research to determine the variation of each variable, and bivariate analysis to see the relationship between independent and dependent variables. The statistical test used was chi-square with a significance level of 0.05.

3 RESULT

Table 1: Distribution of respondent characteristics and risk factors for dyslipidemia.

Variable	Categories	n	%
Dyslipidemia	Yes	37	82,2
	No	8	17,8
Ages	>48 Years old	22	48,9
	≤48 Years old	23	51,1
Obese	Obese	25	55,6
	Normal	20	44,4
Smoking	Yes	26	57,8
	No	19	42,2
Hypertension	Yes	30	66,7
	No	15	33,3
LDL	Low	22	48,9
	High	23	51,1
HDL	Low	22	48,9
	High	23	51,1
Triglyceride	Normal	22	48,9
	High	23	51,1
Total Cholesterol	Low	22	48,9
	High	23	51,1

In this study, the proportion of workers with dyslipidemia was 82.2%. Based on workers aged <48 years 51.1%, abnormal BMI 55.6%, smoking 57.8%, hypertension 66.7%, high LDL 51.1%, high HDL 51.1%, high triglycerides 51, 1%, and high cholesterol 51.1% (see table 1).

Table 2: Factors related to dyslipidaemia.

Variable	Categories	p-value
Ages	>48 Years old	0,879
	≤48 Years old	
Obese	Obese	0,025
	Normal	
Smoking	Yes	0,704
	No	
Hypertension	Yes	0,699
	No	
LDL	Low	1,000
	High	
HDL	Low	0,006
	High	
Triglyserida	Normal	0, 136
	High	
Total Cholesterol	Low	0,001
	High	

Bivariate analysis results show that there is no relationship of LDL (p-value = 1,000), triglycerides (p-value = 0.136), smoking status (p-value = 0.704), hypertension status (p-value = 0.699) with the incidence of dyslipidemia and there is a relationship between HDL (p-value = 0.006), obese (p-value = 0,025) and cholesterol (p-value = 0.001) with the incidence of dyslipidemia (see table 2).

4 DISCUSSION

The prevalence of dyslipidemia continues to increase in some developing countries (Fuentes et al., 2003). In this study, the prevalence of dyslipidemia in oil and gas company workers reached 82.2%. The high prevalence of dyslipidemia can be caused by changes in worker lifestyle, especially such as lack of physical activity (Hirai, et al., 2019), smoking habits and unhealthy food intake (Basheikh, 2016).

The results of the bivariate analysis show there is a relationship between obesity status and dyslipidemia status with the risk of cardiovascular disease. This is in line with the theory revealed by WHO (2007) that obesity is a health problem that develops in both developed and developing countries. Prospective epidemiological studies have shown an association between being overweight or

obese and cardiovascular morbidity, CVD mortality and total mortality. Obesity is strongly associated with cardiovascular risk factors, such as raised blood pressure, glucose intolerance, type 2 diabetes, and dyslipidemia. A meta-analysis of RCTs has shown that reducing weight-diet, combined with exercise, results in significant body weight, reducing total cholesterol and LDL cholesterol, increasing HDL-cholesterol, and improving blood pressure control and diabetes.

Based on the Chi-Square test, smoking status does not have a significant relationship with the risk of cardiovascular disease in workers at PT X. This is because smoking can cause changes in the structure and function of blood circulation in the body. According to WHO (2007), Smoking is a major risk factor for heart disease, including heart attacks and strokes, and also has a strong relationship with CHD so stopping smoking will reduce the risk of a heart attack. Cigarette smoking increases the risk of heart attack 2 to 3 times. About 24% of deaths due to CHD in men and 11% in women due to smoking. Despite a progressive decline in the proportion of the population who smoked since the 1970s, in 1996 29% of men and 28% of women still smoked. One thing of concern is the increased prevalence of smoking in adolescents, especially in adolescent girls. People who do not smoke and live with smokers (passive smokers) have an increased risk of 20-30% compared to people who live with nonsmokers. The risk of developing CHD due to smoking is related to a dose where people who smoke 20 or more cigarettes a day have a risk of two to three times higher than the general population to experience CHD events (WHO, 2007).

The results of the bivariate analysis showed that age was not related to the risk of cardiovascular disease. This is contrary to what was expressed by Djohan (2004) that the risk of cardiovascular disease will increase with age. In this study, the age factor becomes unrelated, possibly due to other factors that have a stronger influence compared to the age factor.

5 CONCLUSIONS

Based on the results of the analysis, related factors are factors that can be prevented by adopting a healthy lifestyle at work. Companies are advised to re-activate health promotion programs, especially in work areas such as Ship A. This needs to be done so that the triggering factors for cardiovascular disease can be controlled properly. Further research is needed to find out the most dominant factor influencing the risk of cardiovascular disease in workers in similar industries.

REFERENCES

Basheikh, K., et al., 2016. *Prevalence of dyslipidemia and its associated factors among employees of primary health care centers, Jeddah, Saudi Arabia. International Journal of Medical Science and Public Health* 2016; 5(05): 946–951.

Djelilovic-Vranic, J.; Alajbegovic, A.; Zelija-Asimi, V.; Niksic, M.; Tiric-Campara, M.; Salcic, S.; Celo, A. *Predilection role diabetes mellitus and dyslipidemia in the onset of ischemic stroke.* Med. Arch. 2013, 67, 120–123.

Djohan, T. Bahri Anwar, 2004., "*Penyakit Jantung Koroner dan Hypertensi*", Fakultas Kedokteran Universitas Sumatera Utara, Sumatera Utara.

Fuentes R, Uusitalo T, Puska P, Tuomilehto J, Nissinen A. *Blood cholesterol level and prevalence of hypercholesterolaemia in developing countries: a review of population-based studies carried out from 1979 to 2002.* Eur J Cardiovasc Prev Rehabil 2003;10(6):411–9.

Jayarama, N.; Lakshmaiah, M.R. 2015. *Prevalence and pattern of dyslipidemia in type 2 diabetes mellitus patients in a rural tertiary care centre, southern India.* Glob. J. Med. Public Health 2012, 1, 24–27.

Lopez AD et al., 2006. *Global and regional burden of disease and risk factors, 2001: systematic analysis of population health data. Lancet 2006,* 367 (9524):1747–57.

Qi, Li., et al., 2015. *Prevalence and Risk Factors associated with Dyslipidemia in Chongqing, China.* International Journal of Environmental Research and Public Health 2015; 12: 13455–13465.

Snehalatha, C.; Nanditha, A.; Shetty, A.S.; Ramachandran, A. 2011. *Hypertriglyceridaemia either in isolation or in combination with abdominal obesity is strongly associated with atherogenic dyslipidaemia in Asian Indians.* Diabetes Res. Clin. Pract. 2011, 94, 140–145.

Stamler, J.; Daviglus, M.L.; Garside, D.B.; Dyer, A.R.; Greenland, P.; Neaton, J.D. 2000. Relationship of baseline serum cholesterol levels in 3 large cohorts of younger men to *long-term coronary, cardiovascular, and all-cause mortality and to longevity*. JAMA 2000, 284, 311–318.

Vergani, C.; Lucchi, T. 2012. *Plasma HDL cholesterol and risk of myocardial infarction.* Lancet 2012, 380, 1989–1990.

World Health Organization, 2007. *Prevention of cardiovascular disease: guidelines for assessment and management of total.* Genewa.

Zhou, X.; Zhang, W.; Liu, X.; Li, Y. 2014. *Interrelationship between diabetes and periodontitis: Role of hyperlipidemia*. Arch. Oral. Biol. 2014, 60, 667–674.

ICOH

ORIGINALITY REPORT

11%	%	11%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Qi, Li, Xianbin Ding, Wenge Tang, Qin Li, Deqiang Mao, and Yulin Wang. "Prevalence and Risk Factors Associated with Dyslipidemia in Chongqing, China", International Journal of Environmental Research and Public Health, 2015. Publication	11%

Exclude quotes	On	Exclude matches	< 50 words
Exclude bibliography	Off		