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International Conference

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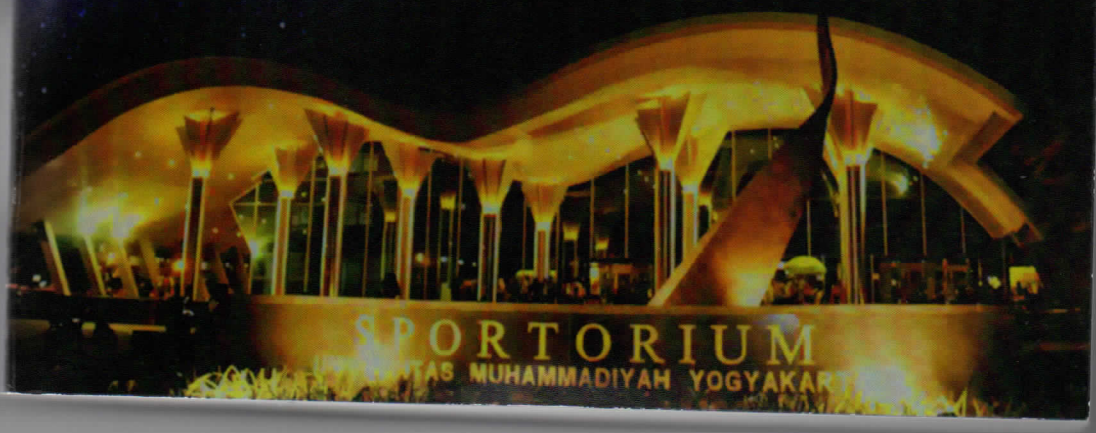
"Leveraging Multidiciplinary Collaboration
to improve Healthcare Quality and Equity"



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WELCOME MESSAGE FROM COMITTEE

Dr. dr. Titiek Hidayati M. Kes.
(Dr. MD. MPH)
President of 2015 International conference and health science (2015 ICMHS).
Dept of Epidemiology, public health and family medicine.
Faculty of medicine and health science, Universitas Muhammadiyah Yogyakarta (UMY), Indonesia

Welcome to 2015 International Conference Medical and Health Science (ICMHS) in Indonesia. The objective of the 2015 ICMHS is raising the awareness of health professionals in healthcare quality and equity through international collaboration, creating a sustainable platform to tackle current health issues in developing Asia, and increasing interdisciplinary and multidisciplinary knowledge and training in primary health care.

On behalf of UM, we are honoured to invite you to 2015 ICMHS which will be held from 1to 4 September 2015 in Yogyakarta, a city on the Indonesian island of Java known for its traditional arts and cultural heritage. The Conference is one of our effort for a collaboration with universities from various countries: Medical College National Cheng Kung University, Taiwan; Medical faculty of Muster University, Germany; Pharmacy faculty of Mahindol University, Thailand; Guangxi Medical University, China and Faculty of Dentistry, Tokushima University, Japan. Universiti Malaysia Sarawak (UNIMAS), Malaysia and Faculty of Medical and health science, Universitas

Muhammadiyah Yogyakarta (UMY). The conference theme of "**Leveraging multidisciplinary collaboration to improve healthcare quality and equity**" highlights the fact that new health non-communicable disease problems have arisen, in part, due to rapid urbanization and industrialization.

The Conference format will include panel discussions, symposia, posters, workshops on the many aspects of medicine, dentistry, pharmacy, nursing etc and will highlight the efforts of health promotion, environmental health, rehabilitation and primary health care. Our goal of the conference is publishing full text articles in Journal of public health science /IJPHS (http://iaesjournal.com/), or Proceeding Book (http://www.iiste.org) or Proceeding Book with Indonesia ISBN. We hope, there is an initiation of education or research collaborative, base on "round table discussion" with abroad university.

We look forward to learning from your experiences and researches. Your participation will contribute immensely to the success of the 2015 ICMH. We look forward to welcoming you to Yogyakarta, where you will find lively constructive discussions at the Conference and warm "Jogya" hospitality.

Best regards

Dr. dr. Titiek Hidayati M. Kes. (Dr. MD. MPH)

CONTENTS

Influence of blood colesterol rate to cataract maturity level

Nur Shani Meida[1], Yunani Setyandriana[2], Aisyah Shofiatun[3], Eka Febiyanto [4]

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ABSTRACT

BACKGROUND

Cataract is a kind of disease which causes blurring at eye lens. Cataract is the most causes of blindness in the developing country. Oxiterol or oxidized cholesterol cause sitotoxic effect in the fiber lens of eye and contribute of developing to be cataract. Oxiterol was formed from cholesterol autooxidation process, free radical attack and enzymatic process.

AIM

To study the influence of blood cholesterol rate to cataract maturity level.

METHODS

This research character is analytic observational with cross sectional approaches. The research were conducted on September – December 2014 at Bantul, Yogyakarta. The criteria of inclution are man and women who have age more than 50 years. Additionally, patient with history of diabetes mellitus, eye trauma, chronic infection and long-range of steroid usage. Detection of cholesterol was conducted by cholesterol

stick. The eye observation was done by ophthalmologist. The data was analyzed using Kendall tau correlation assay.

RESULT

The results showed that counted 45 responder (90 eyes) gathered in this research. The are 33,3% (30 eyes) diagnosed as a immature cataract and 66,6% (60 pair of eyes) diagnosed as a insipien cataract. Result of the data analysis shown r = 0,591, that indicate blood cholesterol rate have influence to cataract maturity level. Then, the meaning of significancy value was showed that p = 0,000.

CONCLUSION

There are influence of blood cholesterol rate to cataract maturity level

KEYWORDS: Blood cholesterol rate, cataract

INFLUENCE OF BLOOD CHOLESTEROL RATE TO CATARACT MATURITY LEVEL

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CONCLUSION
Cholesterol level in the blood affects toward cataract maturity.

KEYWORDS: Blood cholesterol level, cataract maturity.

Background

Cataract is total turbidity (opacity) or partial in eye lens that cause blindness (Dorland, 2007). World Health Organization (WHO) estimates there are 45 million people in the world with blindness, a third is in South East Asia. The number of blindness caused by cataract in Indonesia is highest if compared with countries in South East Asia.

The development of cataracts associated with changes of fat in a person's lens fibers, especially the increase and accumulation of cholesterol in these cells. Some pathways directly or indirectly, the new note also states the involvement of oxidized derivatives of cholesterol (called oxyterol) in the maturity level of cataract.

Oxyterol is derivate of cholesterol compound, namely oxygenated cholesterol . In the body, oxyterol can be formed by 2 pathways, exogenous and endogenous . Exogenous , oxyterol is formed by cholesterol auto-oxidation process, while endogenous , oxyterol compound is formed by free radical attack or enzymatic process (Lyons MA, 2001). Oxyterol can be produced by enzymatic or non-enzymatic process. Oxyterol can caused a cytotoxic effect that contribute for the beginning of cataract dan the development of catarct (Anne Vejux at al, 2013)

By watching the background as written above, the research needs to be done about the effect blood cholesterol level on cataract maturity.

Materials and Methods

This research is non-experimental with cross-sectional research design. The research is done in Bantul within September – December 2014. The inclusion criteria in this research are men and women aged ≥ 50 years old and willingly being a research subject. The criteria are patients with diabetes mellitus ,traumatized eyes, wearing a long-term corticosteroid, has experienced a chronic eye infection, and have a history in eye surgery before.

Cholesterol levelin the blood is measured by using a digital gauge cholesterol. Examination of the degree of maturity of the cataract checked by Ophtalmologist.

Data analysis using a simple correlation test to determine how strong the effect of cholesterol level in the blood with the level of development of cataract.

Result and Discussion

The research about the effect of blood cholesterol level to cataract maturity level can collect a sample of 45 people (90 eyes) that well-suited with the inclusion and exclusion criteria. The Distribution of the subject can be seen in the table below.

Table 1 The Distribution of subject based on age

Age	N(Subject)	%
50-60	12	27.7
61-70	25	55.6
71-80	8	17.7
Total	45	100

According to the table above, data can be obtained through subjects aged from 50 to 80 years old, there were 12 subjects (26.7%), aged 50-60 years old, 25 (55.6%), subjects aged 61-70 years old, and 8 (17.7%) subjects aged 71-80 years old.

Table 2 The Distirbution of subject based on Sex

Sex	N(Subject)	%
Male	18	40
Female	27	60
Total	45	100

According to the table above data can be obtained that the data contained 18 subjects (40 %) are male and 27 subjects (60%) are female.

Table 3 The Distribution of sample based on cholesterol level

Cholesterol level	N (Subject)	N(Eyes)	%
Normal (≤ 200 mg/dl)	30	60	66.7
High(200-239 mg/dl)	8	18	20
Very High(>240)	9	12	13.3
Total	45	90	100

According to the table above data can be obtained that a number of 60 eyes (66.7%) have a normal cholesterol level, 18 eyes (20%) have a high cholesterol level and 12 eyes (13.3%) have very high cholesterol level. The highest frequency on the normal category, so can be concluded that the majority of sample have normal cholesterol level.

Table 4 The Distribution of sample based on cataract maturity level.

Sample characteristics	N(Subject)	N(Eyes)	%
Normal	-	-	-
Incipient	30	60	66.7
Immature	15	30	33.3
Mature	-	-	-
Hypermature	-	-	
Total	45	90	100

According to the table above, data can be obtained that a number of 60 eyes (66.7%) have incipient maturity level and 30 eyes (33.3%) have immature maturity level. While for other categories could not be found the sample. The highest frequency on incipient category, so can be concluded that the majority of sample have incipient maturity level.

Data analysis in this research use a simple correlation, a relation between an independent variable (cholesterol level in blood) towards a dependent variable (cataract maturity level) as it is, without considering the existence of other independent variabels. In this research , data were correlated with Kendall correlation because the data that obtained is ordinal data. The

results from calculation of the simple correlation is simple correlation coefficient as shown in the table below.

Tabel 5 Kendall Tau's Correlation Data analysis

	Kendall Tau	Cholesterol Level	Cataract maturation	N
Cholesterol Level	Correlation coefficient	1.000	0.591	90
	Sig – 2 tailed	-	0.000	
Cataract Maturatio	Correlation coefficient	0.591	1.000	90
	Sig – 2 tailed	0.000	-	

In the Kendall Tau's data analysis value of r = 0.591 with significant value or p value. P< 0.05 means cholesterol level in the blood effects on cataract maturity level significantly. The value 0.591 means that the strength of the correlation between the two variables is enough. In the correlation coefficient table is positive means the higher the cholesterol level the higher the cataract maturity level.

The research about the effect of blood cholesterol level towards cataract maturity level has been done in several villlages in Bantul and it got 45 people (90 eyes) as subjects that well-suited with inclusion and exclusion criteria.

The article review about cholesterol and cataract by Vejux et al (2010) with title " The Contribution of Cholesterol and Oxyterol in the Cataract Pathophysiology With A Tendency To Increase Pharmacological Management" well-suited with this research. The growth of cataract is related with the changes of fat level in someone's eye lens fiber. This thing especially related to the increase and accumulation from the cholesterol level in this cell. Some pathways direct or indirect that just newly known also said that there is involvement of oxidized derivatives of cholesterol (called oxyterol) in the growth of cataract. Oxyterol can be produced from enzymatic or non-enzymatic process, and some oxyterols can cause cytotoxic effect that contributes toward the beginning and the growth of cataract. Beside that, Anne Vejux in article review also said that in lens membrane of cataract patient there is a high cholesterol level, it's closely related to enviroment that can increase exposure to uv rays and

ozone. So this is that can cause to increase the formation of oxidized cholesterol or usually called oxyterol, and it relates with this research, cholesterol level affects the level of maturity of the cataract. From 92 samples, the 12 of them have a very high cholesterol level and immature maturity level.

Vejux et al's statement (2010) also reinforced with Giran et al 's research result (1998) with title " The Accumulation of Cholesterol Oxides on Cataract Patient" that says with research result , there is oxyterol accumulation (cholesterol oxides) on cataract patient. Although the number of cholesterol oxides on cataract not too high but it still affects the damage of eye membrane that cause the cataract. Based on the research can be concluded no matter how much the number of cholesterol in the blood will affect formation cataract maturity level, and it's well-suited with this research that sample with normal cholesterol level also have a cataract maturity level that known as 60 and 50 samples have incipient cataract maturity level while the rest is immature with 9 samples.

Several researches reveal the reason why cholesterol can affect the eye lens. One of them, Duindam et al (1998) with research title " The changes in cholesterol, phospholipid, and protein in the opacities of eye lens " said that the beginning of the cataract formation affects membrane eruption in lens fibers where the changes in cholesterol protein level and phospholipid be the supporting factor that cause a cataract. The lens opacities will happen continuously and progressive. That thing is well-suited with this research, there is positive correlation direction within cholesterol level and cataract maturity level. This statement also suported by Broekhuyse's research (2009) with title "membrane lipids and proteins and cataract lens ages". Broekhuyse said that polypeptide can change the crystal-α structure on the lens that directly form the cataract.

The causes of changes in the eye lens also discussed in Huang et al's (2005) research with title "The Changes of fospolipid on eye lens related with age and cataract patient" with result the research of the changes numbers of fat age affects cataract where glycolipid will increase the stiffness of eye lens membrane , so it will reduce the calcium pump activity causes a decrease in lens fiber cells in the eye. The Changes in calcium level in the lens cells may result in some changes to things such as levels of protein, potassium, sodium and water content. This thing is part of chemical pathogenesis of cataract, as Olga (2010) said in her Journal. The changes in levels of sodium and fluid and electrolyte balance settings are set by Na/K ATPase activity is the basis of maintenance graiden ionic concentration and clarity of the lens. So, if

there is interference in it, it will decrease the clarity of the lens that can lead to the formation of cataracts. In Huang's journal (2005) said that the relation fat oxidized with changes in fluid balance and cataract.

On the scheme above is described that oxidized lipids can cause a decrease in Ca-ATPase and decrease in lens development, where the both of them has been discussed before that it can affect the formation of cataract.

Conclusion

Cholesterol level in the blood affects toward cataract maturity.

Suggestion

1. Ongoing research needs to be done about the cataract maturity level with categorize incipient, immature, mature and hypermature cataract patient with the same amount of respondents in every category.
2. The related research needs to be done about cataract maturity level that related with life style factor that affect cataract maturity level such as smoking, diet, etc.
3. The related reserach needs to be done about cataract maturity level with triglycerides examination to get reserach result that more accurate.
4. Continuous research about cataract maturity level with cholesterol level examination on eye lens.

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