THE DIFFERENCES OF NEWBORN WEIGHT INFANT TOWARD SOIL TRANSMITTED HELMINTHES INFECTION IN PREGNANCY

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ABSTRACT

Introduction: Maternal nutrition status before and during pregnancy has affect toward inters-uterine growth. This research aimed to differences of newborn weight infant toward soil transmitted helminthes infection with uninfected. **Method:** This research is observational research with cross sectional approach. *S*amples in this research took with consecutive sampling, total samples in this research were 50 people. Instrument of the research used questionnaires, enterotest, baby scale. Processing and analysis data used independent t test. **Conclusion:** There were differences of newborn weight infant in mothers infected of soil transmitted Helminthes (0,046).

Keywords: Soil transmitted helminthes infection, newborn weight infant.

INTRODUCTION

The infant mortality rate (IMR) in Indonesia is relatively high around 32 per 1,000 live births. The Millennium Development goals (MDG's) to reduce infant mortality rate in Indonesia become 23 per 1,000 live births (WHO, 2013).

The incidence of low birth of weight infant is one risk factor for neonatal mortality due to neonatal mortality rate of 60-80% due to low birth weight. The prevalence of LBW in the world at 15.5% and approximately 96.5% came from developing countries (WHO, 2011).

Growth and development of fetus in the womb is strongly influenced by maternal nutrition before and during pregnancy where it will affect the weight of infant (Gibney,2009). Babies born with low birth of weight infant increased the risk of prenatal death. Loss of weight starts during the first trimester of pregnancy influenced of placental function derived from protein and maternal factors (R. Bukowski et al,2007).

Parasite infection is an important problem as the cause of micronutrient deficiencies. Worm infection during pregnancy will affect on nutrition status of pregnant and the effect on the fetus (Brooker S,2008).Worm infection will decrease the metabolism process, nutrients absorption process, and hookworm infection will cause of loss of blood from the gastrointestinal tract (Wiknjosastro H, 2009). Generally worm infections in humans are caused by worms trichura T., A. lombuicoides, N. americanus, *A.*doudonale. Hookworm and roundworm infections will lead to lack of energy and protein that will cause of nutrition absorption disorder in patients (Awasthi S., 2003).

Increasing of anemia risk occur in people infected with hookworm and Trichuris trichura. T.Trichura worm increases the risk of anemia greater than people who not infected with this worm (Makhoulet al, 2012) . Pregnant women with anemia had 3-fold risk of having a baby of low birth weight compared with pregnant women who did not have anemia (Syarifuddin, 2011).

Based on the data from Padang Health Department in 2013 found the incidence of low birth of weight was highest in Ambacang Public Health Service with incidence rates around 4.5% higher than the incidence of low birth of weight infant in Padang around 2.0% (Assia S. and Kurniawati I ., 2014)

Prenatal care in Indonesia is still using minimum standard, maternal health problems remains a priority national issue, but efforts to control the problem is still not

completely down to main factors that cause the problem. The incidences of Low Birth of Weight Infant in national level can not achieve the MDG targets on 2015. So that's the result showed the relationship of nutritional status, hemoglobin levels, soil-transmitted helminthes infections and other several factors in pregnant women at term with birth weight infants.

METHOD

Types of this research is observational with. cross sectional approach. This research conducted as long as one year. Samples of the research are mothers with inpartus who gave birth in a Midwife Private Practice in Ambacang Public Health Center. Samples used 50 people using consecutive sampling technique The instruments used questionnaire, enterotest, baby scales.
Feces taken when the mother's straining, It taken about 10 grams and was added to the stool tube and sent to Parasitological laboratory FK Uanad for worm infections examination, weighing the baby's birth weight in the first hour after birth and then recorded on a common questionnaire. The data obtained processed and analyzed using independent t test.

RESULTS

Univariate Analysis

Table 1. Distribution of Characteristics Frequency of Pregnant Mother

Variabel	Total	
	F	**%**
Education	39	22,0
High	11	78,0
Low		
Occupation		
Jobless	42	84,0
Work	8	16,0
Socioeconomic		
High (≥ Rp. 1,650,000)	37	74,0
Low (<Rp.1.650.000)	13	26,0

Based on table 1 above, It shows that from 50 mothers of term studied, mostly highly educated mothers (78%), most of them are jobless or housewife (84%), and has high level of socioeconomic (74%).

Table 2. Frequency of infection Soil Didtribusi Transmited helminthes On Pregnant Women

Variabel	Total	
	F	**%**
Soil transmitedhelminthes Infection	4	8.0
Infection	46	92.0
Un infection		

Based on table 2 above most of respondents are not infected with soil-transmitted helminths worm (92%) and 4 (8%) infected, 1 person declared infected with Ascarislumbricoides worm with number of worm eggs 400 / g in faeces categorized of heavy infection, 1 person declared infected with Trichura Trichuris worms with number of worm eggs 157 500 / g in feces included in middle infection category. 2 people infected with both of that worm, they included in middle infection category for *A.* lumbricoides worm and heavy infection category for T.Trichuris worm

Bivariat Analysis Results

Table 3 The difference of birth weight infants toward soil transmitted helminthes infection.

Variabel	*Mean ±SD*	*SE*	*p valu e*
Infected of STH	2375.00±170 .78	85.39 1	0.04 6
Uninfect ed of STH	3054.35±455 .68	455.6 8	

According to the table obtained test results of independent test showed the weight of infants on mothers who were not infected with worms soil transmitted helminths around 3054.35 grams with

standard deviation 455.68 grams, while weight of infants on mothers who were infected Soil Transmitted helminths around 2375.00 grams with standard deviation 170.78 grams with p value = 0.046 with alpha 5% , it can concluded that there is differences of birth weight infants on women who were infected with soil-transmitted helminths

DISCUSSION

The differences of birth weight infants on mothers who were infected soil transmited Helminths with uninfected mothers

Based on the results of the research showed there are differences in birth weight infants on mothers who were infected soil tranmited Helminths with uninfected mothers p = 0.046 (p <0.05).

The condition of the pregnant woman with a worm infection will affect the state of the nutrients in the body. Mothers who experience worm infection will experience a shortage of nutrients in the body this is because the worms will live in the intestine and then will live in intestine. The worms will grow in intestine, if infected with Trichura Trichuris and Ascarislumbuicoides worm, it will affect the nutrients in the body in which both types of worms will cause a decrease in the body's metabolism and affect of absorption disorder in body thus nutrients that enter the body will not be enough to meet the body's needs, so that if this situation occurs during pregnancy will affect the nutritional needs of the fetus so the pregnant women were infected with worms tend to give birth to babies with low birth weight.

Research conducted by Ndibazza et al (2010), Helminths infections during pregnancy can affect the pregnancy adverse outcomes. Pregnancy with worm infections will result in anemia, protein-energy malnutrition, low birth weight, and prenatal death may also occur. Infections caused by Ascaris lumbricoides may result of decrease in appetite, decrease the absorption of fat, protein and will affected damage in intestinal mucosa, will affect the nutritional status of patients (Cunningham FG., 2012). Infections of worm Trichura Trichuris will cause nutrition deficiency, magnesium deficiency and protein the worst effects of this condition is occurrence damage of intestinal wall.

Infections A. Lumbricoides in humans caused by the spread of infectious worm eggs through the ground this occur very quickly in ground infected of feces containing worm eggs (Mordi and Ngawodo, 2007). The results of this research, 3 mothers who suffered from worm A. Lumbricoides infections where 1 person suffered heavy infections and two others. Patients with worms A.Lumbricoides, it will cause loss of 0.8 grams of carbohydrates and 0.035 grams of protein for every day. One female worm will produce 240,000 eggs per day, and the worm will continue to proliferate in the intestine, how breed of worms A.Lumbricoides is by blocking absosbsi area within the intestinal lumen will then lead to absorption disorder and nutritional deficiencies will occur in people and if it in pregnancy will cause deficiency transfer of nutrients from the mother kejanin so will affect the growth of the fetus (Irianto K., 2009).

Conditions worm infected mother is also accompanied by nutritional status conditions are less where the mother LILA size 22.1 cm, this condition describes the condition of poor nutritional status in which the mother LILA size below the normal size so that the possibility of the mother experiencing chronic worm infection but no symptoms because based on the examination of the mother has a worm infection *A. Lumbricoides* the lightweight category. Birth weight infants of mothers who were infected not only influenced by maternal condition worm infections, but there are other data that support these conditions where most of the mothers infected with worms have socio-economic status is low, and has a circumference of the upper arm below normal , So that the state of helminth infections can caused worst

condition of mothers with maternal nutritional conditions and the effect on labor outcomes.

T.Trichura heavy worm infections will cause serious symptoms and impact on heavily infected respondents have close birth spacing of less than one year, low socioeconomic conditions, the size of a standard MUAC below normal, and mothers are heavy anemia, several factors this greatly affects the health of the mother and the fetus, so the presence of the positive results of the worms that can aggravate the condition of the mother's health and the effect on fetal growth and development of uterine intera. Mothers who experience worm infections tend to give birth to babies with a lower birth weight than women who did not undergo worm infections, low birth weight is not only influenced by the condition of the women who experienced a worm infection but there are many other factors that influence it.

CONCLUSIONS AND SUGGESTION

Most pregnant women do not sufferred of soil transmitted helminthes infection, and there is difference on birth weight infants in women who had infection of soil transmitted helminthes with mothers who did not infected.

Improving the quality of antenatal care, the health service in women of childbearing age and premarital with early detection of the complete examination of health status, laboratory tests such as hemoglobin examination level, examination of worms, disease screening which is likely to accompany during pregnancy.

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