

Analysis of Risk Factors for the Habit of Drinking Cold Drinks with Tonsillitis in Children aged 5-16 Years in the Work Area of the Layang Health Center, Makassar City, South Sulawesi Province

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Tonsillitis, commonly referred as inflammation of the tonsils, can affect all ages, but is more common in children. The cause of tonsillitis is an infection with streptococcal bacteria or it can be a virus that is acute / chronic due to failure or inadequacy of antibiotics in people with acute tonsillitis. The aim of this study was to determine the amount of risk between the variables studied and the incidence of tonsillitis in children aged 5-16 years at the Layang Health Center in Makassar City. The method of this study is an analytical method with a case control approach, a total sample of 105 respondents, and the sampling technique using purposive sampling. The results showed that the habit of drinking cold drinks is a risk factor for tonsillitis where the odds ratio was 4.393, which means that children who drink cold drinks are 4.393 times more likely to develop tonsillitis. The recommendations of the study for the other health workers, NGOs, and other agencies engaged in the health sector in order to evaluate the health education given on tonsillitis prevention and control, so that it can be used as a basis for public knowledge about tonsillitis and the factors that influence it.

Keywords: Tonsillitis, cold drinks, children aged 5-16 years.

BACKGROUND

Tonsillitis, commonly referred to as inflammation of the tonsils, can affect all ages, but is more common in children. The cause of tonsillitis is infection with streptococcal bacteria or it can be a virus that is acute / chronic due to failure or incompatibility of antibiotics in patients with acute tonsillitis. (1) Tonsillitis generally attacks children because of several factors, one of which is the child's immune system is not yet fully formed, children's diet is also one of the triggers where children are mostly allowed by their parents to consume food or drinks that are not healthy and contain nutrients that are not able to meet the needs of children, plus the food circulating today contains many substances that are not good for children's growth and health. (2)

Some of the symptoms that will be encountered when someone is suffering from tonsillitis are the feeling of easily feeling tired, lethargic, disturbed concentration, uncomfortable throat, difficulty and pain when swallowing, bad breath and sometimes interference with the ears and disturbances in the sleep cycle (3). It is estimated that in the world in 2013 there have been cases of around 287,000 children under 15 years of experiencing tonsillitis, where as many as 248,000 children (86.4%) underwent tonsiloadenoidectomy and 39,000 others (13.6%) underwent tonsillectomy alone. (4)

In Indonesia in 2012-2013 there were 55,383 hospitalized people, while 37,835 outpatients caused by tonsillitis, besides that, the 2013 basic health research data showed that the prevalence of

chronic tonsillitis was 4.8%, the second highest after acute nasopharynx (5,6 %). (5)

Children aged 5-16 years are a period where they have a tendency to have poor or unhealthy eating patterns and behaviour, because at this age children prefer to consume sweet foods and cold drinks and are widely available around the house or school at affordable prices. This is what triggers a blockage of immune formation and causes children to be more susceptible to disease. (6)

Rusmarjono (2013), in his research, found that the mouth is a medium for germ culture, especially beta hemolytic streptococcus, if it is not properly maintained, such as rarely brushing teeth, besides that bacteria from food and drink residues are also easily carried into the mouth, this is what triggers recurrence of tonsillitis. One of the causes of tonsillitis is the recurring incidence of ARI suffered by someone, which is caused by the occurrence of indoor and outdoor air pollution.(7). The sources of indoor pollution that are often encountered are cigarette smoke, mosquito repellent smoke, and kitchen burning smoke, while outdoor pollution is caused by air pollution from motorized vehicles, smoke generated from factories and dust on the streets.(8)

Tonsillitis is included in the top ten outpatient diseases at Layang Public Health Center in South Sulawesi Province with 189 patients visiting Layang Puskesmas. According to data available at the Puskesmas Layang, Makassar City, in 2015 there were 817 cases of tonsillitis sufferers and was included in the top ten diseases in Layang Public Health Center, while in 2016 the cases of tonsillitis / tonsils were no longer included in the top ten diseases. And in 2017, as many as 189 cases appeared again and were included in the ten largest diseases in Layang Health Center with tonsillitis with an average age of 5-16 years.(9)

METHODS

The research method used is a quantitative method using an analytical study approach with the research design used is a case control, namely non-experimental research that is retrospective. The population in this study were all children aged 5-16 years suffering from tonsillitis / tonsils based on secondary data from the Register book of

Puskesmas Layang, Makassar city. The case in this study was a child suffering from tonsillitis / tonsils based on secondary data from the Register book of the Layang Public Health Center in Makassar City. Controls in this study were children who did not suffer from tonsillitis / tonsils (neighbors beside the left, right, front, and back of the patient) in the working area of Puskesmas Layang, Makassar City. The determination of the sample size in this study used the Lemeshow formula for case control studies with $OR = 6$ and $P2$ (proportion of exposure in the comparison group) = 0.8. at a significance level of 0.05. (10)

The minimum sample size estimated based on the Lemeshow formula is 32 cases with a ratio of cases and controls of 1: 2. So that the total sample estimate is 96 samples. Coupled with 10% to anticipate the non-response and incomplete data so that the total sample size is 105 samples. (11) The sampling technique used in this study was purposive sampling. Data obtained directly from the first sources in the field such as observations, questionnaires and individual and group interviews. The researchers used the odds ratio test with the lower limit and upper limit values. (12)

RESULTS

Based on table 1, it is found that the number of males in more cases is 58 people (55.2%) than 47 women (44.8%). Based on the table above, it also shows that of the 105 respondents grouped by education where elementary were 43 people (41.0%), junior high school were 47 people (44.0%), and respondents with senior high school education were 15 people (14.3%).

Table 1. Distribution of Cases and Controls by Gender (n=105)

Variabel	n	%
Gender		
Male	58	55.2
Female	47	44.8
Educational Background		
Elementary	43	41.0
Junior High School	47	44.0
Senior High School	15	14.3

Based on the table. 2 out of 83 people who have a high risk (if the respondent often (five times / week) drinks cold drinks) suffer from tonsillitis as

many as 41 people (49.4%). Furthermore, from 22 people who had a low risk (if the respondent did not drink cold drinks frequently (five times / week)) who suffered from tonsillitis were 4 (18.2%).

The results of the Odds Ratio analysis obtained a value of 4.393 with a lower limit and upper limit value not including a value of 1 (1.369-14.094) at 95% CI, which means that the habit of drinking cold drinks is significant. OR value = 4,393, which means that children who often drink cold drinks carelessly have a 4,393 times greater risk of suffering from tonsillitis than children who don't drink cold drinks frequently / rarely.

Table. 2 Analysis of Risk Factors for Drinking Cold Drinking Habit with Tonsillitis Disease (n=10

Drinking Cold Drinking Habit	Tonsillitis Disease						Score/OR / CI 95%
	Cases		Control		Total		
	n	%	n	%	n	%	
High Risk	41	49,4	42	50,6	83	100	OR = 4,393 LE = 1,369 UL = 14,09 4
Low Risk	4	18,2	18	81,8	22	100	
Total	45	42,9	60	57,1	105	100	

DISCUSSION

Tonsillitis or the common people call the tonsils an infection (inflammation) of the tonsils (tonsils) which are generally caused by microorganisms (bacteria and viruses). The age most often and most susceptible to this disease is at the age of 5 to 16 years. In these conditions, elementary school and junior high school children in this case are more likely to develop tonsillitis, and even often experience recurrence. Acute tonsillitis occurs in a span of approximately three weeks, in addition to chronic tonsillitis if a person is infected usually seven or more times in a period of one year, or it could be infection five times over two years, or three times infection occurs in brackets time of one year but occurred sequentially over three years

In this study, 32 cases were obtained and 73 controls (double control to avoid bias) in the work area of Puskesmas Layang, Makassar city. The research was conducted, firstly collecting data on tonsillitis sufferers in the area, this data was obtained from existing data at Layang Public Health Center, then door-to-door visits were made to conduct interviews with all samples, both cases and controls, namely the patient's neighbors and the patient's family.

The habit of drinking cold drinks in people with tonsillitis in this case is the habit of patients who often drink cold drinks that are widely sold in food stalls. 41 respondents often (five times / week) suffered from tonsillitis (49.4%). Furthermore, out of 22 people who had a low risk (if the respondent did not drink cold drinks frequently (five times / week)) suffered from tonsillitis as many as 4 people (18.2%).

The results of the Odds Ratio analysis obtained a value of 4.393 with a lower limit and upper limit value not including a value of 1 (1.369-14.094) at 95% CI, which means that the habit of drinking cold drinks is significant. OR value = 4,393, which means that children who drink cold drinks carelessly have a 4,393 times greater risk of suffering from tonsillitis than children who don't drink cold drinks frequently / rarely.

Based on the results of the study, it can be seen that respondents who have 52 risky eating habits and experience symptoms of tonsillitis are 101 respondents (63.1%) while respondents who have food consumption habits with the category of not at risk and experiencing symptoms of tonsillitis are 59 respondents (36.9 %). From the results of the chi square test that has been carried out, the p value is 0.041 where this value is smaller than the significant level value of 0.05. Thus, it can be concluded in this study that food consumption habits are the cause of tonsillitis in children at SDN 005 Sungai Pinang, Samarinda City. (13)

The results of this study are in line with those obtained by Ringgo et al., 2017 who found that out of 87 samples, there were 32 samples (36.8%) who had chronic tonsillitis and 55 samples (63.2%) who did not suffer from chronic tonsillitis. 32 samples had a risk of eating habits and chronic tonsillitis. The results of statistical tests using fisher's exact test with a p-value = 0.012 (p <0.05), which means

that there is a relationship between eating habits and the risk of chronic tonsillitis in elementary school children in Bandar Lampung. (14). This is in line with research conducted by Sari et al. (2014) which found that as many as 65% of children had tonsillitis, where children with chronic tonsillitis had a habit of eating fried foods, 47.5% consumed spicy foods, 70% consuming snacks, 67.5% of cold drink habits with a p-value of 0.002 which indicates that the habit of drinking cold drinks is one of the causes of tonsillitis.(15).

From research in the work area of the Layang Public Health Center, drinking habits are at risk of tonsillitis, because many children have the habit of drinking ice marimas, or the like because it is cheap and fresh compared to soft drinks. With so many stalls that exist because the location is in a small alley coupled with the large number of people. Inflammation of the tonsils can occur due to the influence on the cleanliness of the ice cubes used (sometimes air to make a drink that contains clean water), high sugar and other substances and frequent or too much cold consumption so that it can cause inflammation of the tonsils.

CONCLUSION

The habit of drinking beverages has a risk of 4,393 times greater than those who do not often / rarely drink cold drinks, against tonsillitis. So that it needs attention to all health workers, NGOs, and other agencies engaged in the health sector so that they can offer health education on the prevention and control of tonsillitis, so that it can be used as a basis for knowledge about tonsillitis and what community factors affect it, so that people are fully aware of maintain health. It is hoped that teachers will intensively educate children about the dangers of food and drink that can cause tonsillitis.

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