

ORIGINAL ARTICLE

Oxyuriasis at the Department of Pediatrics, Dr. Pirngadi Hospital, Medan

by

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Abstract

During the period of 3 months (February - April 1987), a prospective study on oxyuriasis among children had been conducted at Child Health Department of Dr. Pirngadi Hospital Medan. All children over 8 months of age were included in this study. The diagnosis was based on the modified Scotch's technique.

Oxyuriasis ova were found in 21 out 119 children (17,65%). The peak incidence was found in the school age.

Introduction

Oxyuris vermicularis is widespread all over the world. Helminthic infection caused by oxyuris may effect the human being at any age and social class, although the most frequent infected is children of low socio-economic states (Brown and Belding, 1968). Sri Margono et al. (1970) found with anal swab an incidence of 60%, while Lubis et al. (1983) reported an incidence of 0,3% by the Kato's technique, and Tai (1984) by the Scotch's technique found an incidence

of 31,5%.

The diagnosis is based on clinical findings, supported by specific examination of directly detecting the adult worm in stool or finding out the female worm migrating to the anus. The indirect examination is by detecting the oxyuris ova in the stool.

This study was designated to assess the incidence of oxyuriasis in patients hospitalized at the Department of Pediatrics, Dr. Pirngadi Hospital, Medan.

Materials and Methods

This study was done prospectively during February until April, 1987 at Child Health Department Dr. Pirngadi Hospital Medan. All children over 8 months of age were included in this study.

The oxyuris eggs were detected by the modified Scotch's technique as follows: a cellotape was used to examine the stool in

the morning before the children took bath. It was stucked on the skin arround the anus, then removed, and after removing it was stucked again on an object glass which had previously been smeared with glycerin and immediately examined microscopically. Only a single examination was made on each child.

Result

Of the 119 children, 21 were 8 - 12 months of age, consisting of 14 males and 7 females, the 98 remainders were over 1 year old consisting of 50 males and 48 females.

In the age group of 8 - 12 months, oxyuris ova were found in 2 children (9,52%) and in the group of over 1 year it was found in 19 (19,38%). See table 1.

Table 1 : Distribution of infestation of oxyuris by age group and sex

Age	Sex		Oxyuris ova (+)				
	Male	Female	Number	Male	Female	Number	%
- 1 year	14	7	21	2	-	2	9.52
- 3 years	11	8	19	2	1	3	15.78
- 6 years	19	23	42	2	3	5	11.90
- over 6 years	20	17	37	7	4	11	29.72
Number	64	55	119	13	8	21	17.65

Table 2 : The incidence of positive oxyuris ova by sex, age, and nutritional states

Age group	Male	Female	Nutritional state			Total
			Good	Under	Poor	
- 1 year	2	-	-	2	-	2
- 3 years	2	1	1	1	1	3
- 6 years	2	3	-	4	1	5
over 6 years	7	4	-	10	1	11
Number	13	8	1	17	3	21

Discussion

The incidence of infection caused by *Oxyuris vermicularis* is still high due to easy transmission and the commonly found factors inducing the proliferation of oxyuris. The methods used in a study to investigate the oxyuris play an important role in the results.

A direct fecal examination results in only 0 - 5% positivity, while the anal swab and anal Scotch's tape seem to be more

effective. In this study, we used cello tape stucked to an object glass smeared before with glycerin. Glycerin was used to keep the oxyuris ova from becoming defective and thus easily be identified.

This study suggested that the incidence rate of oxyuriasis was 17,65%. Table 3 shows the results of other studies using different methods.

Table 3 : Incidence of oxyuriasis in several studies

Author	Year	Method	Object	Result (%)
Margono et al. (Jakarta)	1979	Anal swab	Young adults in Irian Jaya	60.0
Tumada and Margono (Jakarta)	1972	Direct smear	Children and adults in Irian Jaya	1.0
Tai (Taiwan)	1984	Scotch's method (1x)	School children in Macao	31.5
Lubis et al. (FK-USU)	1982	Kato	Children of PTP-IX's employees	0,3

It seemed that after the anal swab the Scotch tape showed higher positivity. This study revealed that an increased incidence of oxyuriasis was found in children aged over 6 years (table 1).

Previous studies also presented the increased incidence of oxyuriasis in school age children. In a study by Garrison et al. (1963) (cited from Sudigbia et al., 1970) the incidence of oxyuriasis was 58.5% in school age children; Tai (1984) reported that the incidence of oxyuriasis in primary school children was 42.2%. Sudigbia et al. (1970) reported a rate of 58.5% in school age children and the lowest (17.6%) in infants. This may be due to overcrowding which might increase the source of infection and made transmission easier.

In general, the infection of intestinal

vermicular parasites increase in children with inadequate or poor nutritional state. Similarly, the infestation of intestinal worm itself leads the child to have inadequate or poor nutritional states.

This study suggested that oxyuriasis appeared 80% in mild to moderate malnutrition, 14.28% in poor and 4.7% in good nutritional states.

Wirastari (1979) found in Jakarta oxyuriasis in malnutrition as high as 53.5% and in poor nutrition 42.3%.

In this study, we failed to determine the increased oxyuriasis in the inadequate or poor nutritional groups, because most of children admitted to this Dr. Pirngadi Hospital are generally with inadequate or poor nutritional status.

Conclusion

- The incidence of oxyuriasis in the Department of Child Health, Dr. Pirngadi Hospital Medan was 17.65%.
- The highest incidence of oxyuriasis was found in the age group of school-children.

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