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Quarterly

REPORT ON

100-31 May 1962

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SUBJECT OF INVESTIGATION

STUDIES ON IMMUNOLOGICAL
DIAGNOSIS AND THERAPY OF
PARAGONIMIASIS.

RESPONSIBLE INVESTIGATOR

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Quarterly Report

Abstract report of the progress and phase of the work for one year from 1 March 1962 through 28 February 1963 and studied during the period from 1 March 1962 to 31 May 1962.

The purpose of the investigation being made is as follows:

- 1) Studies on polypeptide of the adults of Paragonimus westerni.
- 2) Studies on Hemagglutination test for paragonimiasis.
- 3) Studies on the Chemotherapy.

1. The follow-up studies for one year after mass-treatment with Bithionol.

The authors carried out non-hospitalized mass-treatment with Bithionol on 16 human paragonimiasis patients in Ohama-machi, Shizuoka Prefecture, Japan, and reported on the results for 6 months after the treatment in the previous final report particularly.

The follow-up studies from 6 months to one year after treatment have been completed. The results were as follows:

Paragonimus eggs in stools of all cases disappeared after the medications of Bithionol (30mg/kg-50mg/kg perday from 2 to 5 doses, and no relapses were found as shown in table 1. Bloody or non-bloody sputum,

too, disappeared with the administrations of this drug from 2 to 5 doses and no relapses were found up to now. The complement fixation tests of these 16 cases turned negative within 5 months after the treatment and negative reactions were kept up thereafter as shown in Table 2. Concerning the size of wheals caused with the repeated injections of ppt and V.B.S. antigens at the same sites of the patients before and after the treatment, neither tendency of decrease of the size of wheals nor effects of sensitization of the skin sites with the repeated injections of the antigens were found as shown in Table 3 and 4. No side effects of Bithionol could be found from the results of health conditions examined during 1 year after the treatment as shown in Table 5.

2. Studies on the serum-protein analysis of the paragonimiasis patients.

The analysis of the serum-protein fractionations of the paragonimiasis patients with paper electrophoresis before and after the treatment are now being carried out.

3. Studies on the doses of Bithionol and roentgenological findings after the treatment.

Various daily doses of Bithionol; 20mg/kg, 30mg/kg, 40mg/kg and 50mg/kg were given to 77 cases of Paragonimiasis patients, the efficacies of these doses and roentgenological observations of the chest X-ray findings after the treatment are now being studied at the National Kochi Hospital.

Table 1. Variations in E. P. G. in stools and the clearance after the administration of Bithionol. (Sedimentation techniques with the A.M.S. III method)

Days	Number of the doses	Cumulative No.1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16	
		M		F		M		F		M		M		M		M		F		F		F		F		M		M		M		M	
1	Before	54		7		3		21		162		377		12		18		5		428		18		31		0		2		0		3	
2	treatment	73		3		4		26		72		509		4		8		12		867		32		58		0		0		0		3	
1	1	11		8		11		33		8		24		624		26		18		3		7		3		0		3		0		0	
2	2	113		2		3		11		401		28		6		28		0		2		0		2		0		0		0		0	
3	3	5		0		3		14		204		3		849		10		9		0		0		4		0		4		0		0	
4	4	12		4		0		2		18		201		0		5		5		96		4		3		4		4		0		0	
5	5	6		1		1		4		12		26		3		4		2		148		2		1		2		0		0		1	
6	6	1		2		0		0		20		20		2		0		3		6		1		4		4		2		0		1	
7	7	2		0		1		0		1		0		1		4		1		14		0		1		0		0		0		0	
8	8	0		0		0		0		1		1		0		0		0		6		0		1		0		0		0		0	
9	9	4		0		0		0		0		0		0		0		0		5		0		0		0		0		0		0	
10	10	0		0		0		0		0		0		0		0		0		2		0		0		0		0		0		0	
11	11	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
12	12	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
19	19	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
20	20	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
1M	1M	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
3M	3M	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
6M	6M	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
9M	9M	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
12M	12M	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	

Table 2. Changes of dilution titer of Antiserum in Complement-fixation tests on the individuals before, during and after treatment with Bithionol.

Case No.	Age	Sex	Before treatment		After 10 times medication		1 M.	2 M.	3 M.	4 M.	5 M.	6 M.	9 M.	12 M.
			Medication	times	Medication	times								
1	12	M	X 63	X 45	X 20	-	-	-	-	-	-	-	-	-
2	14	F	>X160	>X160	X150	X 33	X 10	-	-	-	-	-	-	-
3	14	M	>X160	>X160	X 54	X 41	X 11	-	-	-	-	-	-	-
4	14	F	>X160	X 95	X 29	X 13	-	-	-	-	-	-	-	-
5	42	M	>X160	>X160	>X160	X 40	X 42	-	-	-	-	-	-	-
6	18	M	>X160	>X160	>X160	-	-	-	-	-	-	-	-	-
7	32	M	>X160	>X160	X168	X 40	X 22	-	-	-	-	-	-	-
8	59	M	>X160	>X160	X148	X 94	X 93	X 11	-	-	-	-	-	-
9	62	F	>X160	>X160	>X160	>X160	X 29	-	-	-	-	-	-	-
10	16	M	>X160	>X160	>X160	>X160	X 57	X 12	-	-	-	-	-	-
11	44	F	>X160	>X160	X 51	X 25	X 14	-	-	-	-	-	-	-
12	38	F	>X160	X166	X 40	X 26	X 11	-	-	-	-	-	-	-
13	66	M	X 27	X 11	-	-	-	-	-	-	-	-	-	-
14	31	M	>X160	>X160	X 50	X 54	Z 40	X 11	-	-	-	-	-	-
15	20	M	>X160	>X160	-	X 95	-	-	-	-	-	-	-	-
16	59	M	>X160	>X160	X168	X 43	X 24	-	-	-	-	-	-	-

- negative reaction



Table 3. Changes of the increase of diameters of wheal with ppt antigen on the individuals before, during and after treatment with Bithionol.
(unit: mm)

Case No.	Age	Sex	Before treatment		During treatment										Average
			treat- ment	10th 20th day day	1	2	3	4	5	6	9	12			
1	12	M	3	4	4	5	-	3	2	2	-	3	2	3.1	
2	14	F	8	8	7	5	-	11	6	9	-	-	9	7.9	
3	14	M	10	5	6	-	7	9	5	9	6	-	8	7.2	
4	14	F	8	10	7	7	10	6	7	6	5	8	8	7.5	
5	42	M	8	6	7	10	9	11	-	14	9	-	14	9.8	
6	18	M	5	8	6	5	-	-	-	-	-	-	-	6.0	
7	32	M	6	5	7	8	8	7	9	7	5	7	9	7.1	
8	59	M	13	17	9	9	7	12	10	13	10	-	13	11.3	
9	62	F	10	17	9	9	9	8	12	-	-	10	14	10.9	
10	16	M	6	6	5	5	5	5	7	-	-	-	-	5.0	

Case No.	Age	Sex	Before treatment		During treatment												Average
			treat-ment	10th day	1	2	3	4	5	6	9	12					
1	12	M	3	4	4	5	-	3	2	2	-	3	2	3.1			
2	14	F	8	8	7	5	-	11	6	9	-	-	9	7.9			
3	14	M	10	5	6	-	7	9	5	9	6	-	8	7.2			
4	14	F	8	10	7	7	10	6	7	6	5	8	8	7.5			
5	42	M	8	6	7	10	9	11	-	14	9	-	14	9.8			
6	18	M	5	8	6	5	-	-	-	-	-	-	-	6.0			
7	32	M	6	5	7	8	8	7	9	7	5	7	9	7.1			
8	59	M	13	17	9	9	7	12	10	13	10	-	13	11.3			
9	62	F	10	17	9	9	9	8	12	-	-	10	14	10.9			
10	16	M	6	6	5	5	4	5	7	6	-	-	9	5.9			
11	49	F	8	6	7	9	6	9	7	10	6	8	8	7.6			
12	38	F	7	4	5	6	6	8	5	-	6	8	7	6.2			
13	66	M	3	3	4	4	6	2	2	-	-	2	-	3.3			
14	31	M	10	7	10	11	7	8	7	12	-	9	7	8.8			
15	20	M	8	6	7	-	6	-	-	-	-	-	-	6.8			
16	59	M	3	8	9	15	10	7	14	8	6	9	9	9.4			

Average 7.6 7.5 6.8 7.7 7.3 7.6 7.2 7.8 6.8 7.1 9.0 7.5

(Control)

1	9	M	0	0	0	0	2	0	0	0	0	0	0.2
2	13	M	0	0	0	0	0	0	1	0	0	0	0.1

Average 0 0 0 0 1.0 0 0.5 0 0 - 0 0.2

- not examined

2



Table 4. ^{VRS} Changes of the increase of diameters of wheal with ppt antigen on the individuals before, during and after treatment with Bithionol.
(unit: mm)

Case No.	Age	Sex	Before treatment		During treatment		After treatment												Average
			treat-ment	10th day	20th day	months	1	2	3	4	5	6	9	12					
1	12	M	4	5	4	7	-	5	5	6	-	3	5	5.5					
2	14	F	13	11	10	8	-	8	13	9	-	-	10	10.3					
3	14	M	14	10	8	-	10	9	9	9	10	-	12	10.1					
4	14	F	11	11	10	7	7	10	7	7	8	8	8	8.5					
5	42	M	14	8	12	12	15	22	-	15	9	-	14	13.4					
6	18	M	8	14	8	8	-	-	-	-	-	-	-	9.5					
7	32	M	8	7	8	7	10	8	9	8	8	9	16	8.9					
8	59	M	18	9	11	13	7	14	16	16	7	-	14	12.5					
9	62	F	17	18	16	8	17	10	16	-	-	14	11	14.1					
10	16	M	17	18	5	5	8	6	9	8	-	-	9	9.4					
11	49	F	8	6	8	11	8	10	16	7	9	7	11	9.2					
12	38	F	13	10	8	8	6	9	7	-	8	11	6	8.6					
13	66	M	6	5	9	8	8	8	7	-	-	7	-	7.3					
14	31	M	12	15	17	10	22	14	18	13	-	12	16	14.9					
15	20	M	11	8	8	-	15	-	-	-	-	-	-	10.5					
16	59	M	11	10	9	8	18	8	11	10	9	10	9	10.3					

3	14	M	14	10	8	-	10	9	9	10	-	12	10.1
4	14	F	11	11	10	7	7	10	7	8	8	8	8.5
5	42	M	14	8	12	12	15	22	-	15	9	14	13.4
6	18	M	8	14	8	8	-	-	-	-	-	-	9.5
7	32	M	8	7	8	7	10	8	9	8	9	16	8.9
8	59	M	18	9	11	13	7	14	16	16	7	14	12.5
9	62	F	17	18	16	8	17	10	16	-	-	14	14.1
10	16	M	17	18	5	5	8	6	9	8	-	9	9.4
11	49	F	8	6	8	11	8	10	16	7	9	11	9.2
12	38	F	13	10	8	8	6	9	7	-	8	11	8.6
13	66	M	6	5	9	8	8	8	7	-	7	-	7.3
14	31	M	12	15	17	10	22	14	18	13	-	12	14.9
15	20	M	11	8	8	-	15	-	-	-	-	-	10.5
16	59	M	11	10	9	8	18	8	11	10	9	10	10.3
Average			11.6	10.3	9.4	8.6	11.6	10.1	11.0	9.8	8.5	9.0	10.8

10.2

(Control)

1	9	M	3	3	1	1	1	0	0	0	0	0	0.9
2	13	M	1	3	0	0	0	1	0	0	0	0	0.5

0.5

- not examined

2

Table 5. Health conditions after treatment.

Months	Case No. Sex.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		M	F	M	F	M	M	M	M	F	M	F	F	M	M	M	M
1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- healthy