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2006/1/23

## 2005/10/11

## **Abstract**

The present study was carried out on white rats , *Rattus rattus norvegicus* infected with *Giardia lamblia* isolated from patients feces , to investigate the effect of radiation with gamma rays on the degree of its infection and resistance of stimulation of immune response both cellular and humoral . After 24 hrs of radiation there was a clear effect on immune response on the host as it appears that the irradiated *Giardia* stimulated the immune system more than those un-radiated as it stimulates the production of neutrophils , monocytes , lymphocytes .

Rattus rattus

Giardia lamblia

norvegicus

(24)

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Giardiasis Giardia lamblia . (Hofman et al., 2000) IgA . (Rendtorff , 1954) IgM (Hermans et al , 1966) (% 89). (Ridley & Ridley , 1976) IgG IgM gammaglobulin ) IgE IgD (Roberts and Janovy, 2005 . (Ament & Rubin , 1972) . (Jones & Brown, 1974) IgA . (Brikhead et al , 1989)

Nash ) % (60.70.100) IgA IgG IgM (%14) (et al. , 1978 . (Smith , 1985) Rice ) (% 80) IgG (& Schaefer , 1981

. IgA

		IgA
. (Kapl	IgA an et al., 1985)	. (Heyworth , 1986)
IgG	IgA	
		(Farthing and Goka, 1987)
	. (Edeson et al. , 1986)	
		•
Rattus rattus		: -
		norvegicus
	6 – 5	

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(1995) Shnawa
                                                                        (410 ×2)
         (Craft, 1982)
                                                     ° 8 – 4
intraoesophageally
                                           (Roberts - Thomson et al., 1976)
                                                               :
                                                                     G. lamblia
                                                                     6 - 5
                                  Control
                                                            ^{3} / (^{4}10 \times 2)
G. lamblia
                                   (^{-3}10 \times 0.1122)
                                                            (Cesium-137)
                                            <sup>3</sup> / (<sup>4</sup>10×2)
3
     (20)
               Vials
                             (4)
                                                   (1)
     (24)
                                                     (^{-3}10 \times 1.5624)
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29

$$N = NO e^{-\lambda t}$$
 
$$t \qquad NO \qquad N$$
 
$$0.693 = \lambda t_{1/2} \qquad . (1993 \qquad ) \qquad t_{1/2}$$

:

 $t_{1/2} \\$ 

3 (5) . (1980) Waynforth (EDTA)

Phagocytic index

Nitro Blue Tetrazolium . (Park et al., 1968)

 $100 \times -$ 

(1)

(p < 0.05)

(7) (24) •••••

: Neutrophils

(2) (P < 0.05)

(P < 0.05)

(24) (P < 0.05)

(3) : Eosinophils

(24)

(4) : Basophils

(5) : **Lymphocytes** (P < 0.05)

. ( P<0.05 ) ( P < 0.05 )

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(P < 0.05)
                                               (P < 0.05)
           (24)
                               (P < 0.05)
                                                (P < 0.05)
         (6)
                       : Monocytes
                                                  ( P<0.05)
                         (P < 0.05)
                                               (P < 0.05)
                 (P < 0.05)
                                               (24)
                 (P < 0.05)
                (7)
                              : Phagocytic index
   (
               ) microphages
                                           (NBT)
                                             (24)
t
                  .( P < 0.05)
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(24)		:( 1
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(24)				*/
±	±	±	±	
$5082 \pm 15600^{\text{ b}}$	$3340 \pm 15967^{b}$	2941 ± 11457 <sup>b</sup>	$1192 \pm 13441^{b}$	1
4296 ± 15941 b	$32628 \pm 44032^{a}$	$3398 \pm 14482^{b}$		3
$4434 \pm 14475^{b}$	$3427 \pm 13016^{b}$	$4540 \pm 14228^{\text{ b}}$		7
$4342 \pm 17467^{b}$	$1728 \pm 10797^{\text{ b}}$	1457 ± 9050 b		15
5109 ± 17164 b	3579 ± 10083 <sup>b</sup>	2858 ± 15500 b		30

( 0.05 )

(24)

(24)				3
±	±	±	±	# ST.
$7.6830 \pm 21.5556^{a-c}$	$8.6468 \pm 24.1000^{a-c}$	$8.4334 \pm 18.7000^{\text{b-d}}$	$1.1547 \pm 12.6667^{d}$	1
$8.1854 \pm 28.0000^{a}$	$2.4129 \pm 23.4000^{a-c}$	$7.4117 \pm 23.6000^{bc}$		3
$7.7090 \pm 20.0000^{a-d}$	$3.6780 \pm 17.4444^{b-d}$	$10.1830 \pm 25.2222^{ab}$		7
$6.5887 \pm 12.6250^{d}$	$3.1002 \pm 17.8888^{b-d}$	$5.1586 \pm 19.8889^{a-d}$		15
$3.4365 \pm 16.1429^{cd}$	5.5076 ± 15.6667 <sup>cd</sup>	$6.0695 \pm 16.3750^{\text{cd}}$		30

(0.05)

: (3)

(24)

(24)

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±	±	±	±	
$0.5270 \pm 0.4444^{a}$	0.5164 ± 0.6000 a	$0.5270 \pm 0.5000^{a}$	0.5774 ± 0.3333 a	1
$0.5270 \pm 0.4444^{a}$	0.4216 ± 0.2000 a	$0.5164 \pm 0.4000^{a}$		3
$0.4629 \pm 0.2500^{a}$	$0.5000 \pm 0.3333^{a}$	$0.5000 \pm 0.3333^{a}$		7
$0.3536 \pm 0.1250^{a}$	0.2222 ± 0.4410 a	$0.5270 \pm 0.4444^{a}$		15
$0.5342 \pm 0.4286^{a}$	$0.3333 \pm 0.5774^{a}$	$0.4629 \pm 0.2500^{a}$		30

. (0.05)

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(24)				3/
±	±	±	±	13/37 V
$0.3333 \pm 0.1111^{a}$	0.3162 ± 0.1000 a	$0.3162 \pm 0.1000^{a}$	0.5774 ± 0.3333 a	1
$0.3333 \pm 0.1111^{a}$	0.4216 ± 0.2000 a	$0.3162 \pm 0.1000^{a}$		3
$0.3536 \pm 0.1250^{a}$	$0.3333 \pm 0.1111^{a}$	$0.4410 \pm 0.2222^{a}$		7
$0.3536 \pm 0.1250^{a}$	$0.3333 \pm 0.1111^{a}$	$0.3333 \pm 0.1111^{a}$		15
$0.3780 \pm 0.1429^{a}$	0.5775 ± 0.3333 a	$0.3536 \pm 0.1250^{a}$		30

. (0.05)

: (5)

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(24)									
±	±			±			±		
$10.0014 \pm 63.5556$ cd	8.7057 ±	65.3000 bc	7.9972	±	73.8000 <sup>b</sup>	2.3094	±	82.6667 <sup>a</sup>	1
$5.8689 \pm 55.2222^{d}$	2.7568 ±	64.4000 <sup>c</sup>	9.2021	±	66.3000 bc				3
$6.0886 \pm 61.2500$ cd	$7.0356 \pm$	67.6667 bc	11.1181	±	62.8889 <sup>cd</sup>				7
$9.5019 \pm 70.5000$ bc	4.0552 ±	65.7778 bc	6.0576	±	66.7778 bc				15
$3.5119 \pm 69.0000$ bc	5.5076 ±	69.3333 bc	7.2309	±	70.5000 bc				30

(0.05)

: (6)

(24)

(24)				3/
±	±	±	±	157J
3.8079 ± 14.3333 <sup>ad</sup>	2.1833 ± 9.9000 <sup>c-e</sup>	$1.5239 \pm 6.9000^{\text{ ef}}$	1.1547 ± 3.6667 <sup>f</sup>	1
$5.0442 \pm 16.2222$ ab	$3.3928 \pm 11.8000$ b-d	$2.7568 \pm 9.6000^{\text{ de}}$		3
5.8294 ± 18.3750 a	5.6519 ± 14.7778 a-c	$2.7739 \pm 11.2222^{b-e}$		7
$7.1001 \pm 15.8750^{ab}$	$3.0414 \pm 16.0000$ ab	$2.2236 \pm 12.7778^{b-d}$		15
$5.1223 \pm 14.2857^{\text{a-d}}$	$3.0551 \pm 14.3333$ a-d	$3.3780 \pm 11.3750^{b-e}$		30

(0.05)

(24) : (7)

(24)

. . . . . .

t		±	t		±	t	±	
77.076	2.0000	± 89.0000	89.200	1.5275	± 78.6667	74.478	$2.0000 \pm 86.0000$	1
50.701	2.5166	± 73.6667	51.389	2.5166	± 74.6667	67.119	$2.0817 \pm 80.6667$	3
48.444	2.6458	± 74.0000	17.321	7.0000	± 70.0000	33.342	$4.0000 \pm 77.0000$	7
47.718	2.5166	± 69.3333	25.607	4.5092	± 66.6667	17.473	$6.2450 \pm 63.0000$	15
110.851	1.0000	± 64.0000	12.696	8.1854	± 60.0000	29.303	$3.6056 \pm 61.0000$	30

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(1992) Wolf

(1999) Granot .
( )

(P<0.05) . (72)

Leukaemia (1 )

(72)

. (72)

McDonald (1978) ferguson

(1978) Ferguson

(1986) Heyworth

. . . . . .

(1997) Ramaswarm

Cercariae

Schistosoma mansoni

IgA

IgA (Farthing and Goka, 1987)

(24)

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