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Research Note

PIRY VIRUS ANTIBODIES IN INHABITANTS OF RIO DE JANEIRO

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Serological surveys carried out in Brazil and other South American countries have indicated that human infections by Piry virus (Rhabdoviridae, *Vesiculovirus*) are limitated to some areas of Brazil. Neutralizing antibodies against this virus has been detected in 4 to 17% of residents in communities surveyed in the Amazon basin. Antibody prevalence rates of 20.3% have been found among immigrants from southern Brazil (F. P. Pinheiro et al., 1974, *PAHO Bull., 8:* 111-122); 14.3% of adult residents in the southeastern region, Ribeirão Preto, São Paulo state were immune (L. T. M. Figueiredo et al., 1985, *Rev. Inst. Med. Trop., S. Paulo, 27:* 157-161); 8.0% of blood donors in Uberaba, Minas Gerais state, had neutralizing antibodies (J. Tavares Neto et al., 1990, *Rev. Inst. Med. Trop., S. Paulo, 32:* 211-214) whereas 13-33% of residents in the northeastern region, Bahia state, appeared to be immune to the agent (J. Tavares Neto, personal communication).

In order to verify the occurrence of antibodies against Piry virus in inhabitants from the city of Rio de Janeiro, Rio de Janeiro state, 389 sera were screened by neutralization test, utilizing IC inoculation of two to four day old mice. The constant serum technique (final dilution 1:8) was used with 10 fold varying virus dilutions, according to R. E. Shope & G. E. Sather (1979, Arboviruses, p. 766-814. In E. H. Lennette & N. J. Schimidt, (eds), *Diagnostic procedures for viral rickettsial and clamydial infections.* Amer. Publ. Hlth. Assoc., Washington). Individuals were considered positive when the serum titers were equal to or higher than 1.7 log for neutralization index. Blood was taken by vein puncture mainly in patients at a hospital in Vargem Grande, but a few others were also collected at the dwellings, in Granjas Calábria and Vargem Grande, both in Jacarepaguá county. These localities include peri-urban and rural areas in the west border of the city of Rio de Janeiro and were chosen for being sites of mosquito collections in an arbovirus survey (M. G. Castro et al., 1991, *Virológica 91,* abstracts, p. 4). Personal data from the group was obtained, including previous living places.

Blood samples were collected in 1990 and 1991 and sera were stored at –20 °C until they could be tested for Piry antibody.

Neutralizing antibodies for Piry virus were found in 69 out of 389 persons between 7 to 85 years old (Table). The highest rates of positivity was found among females, 19.5% against 14.4% in males and people older than 30 (84.1%) as shown at Table and Figures. Only 2 children, 7 and 12 years old had antibodies to Piry virus.

The earlier arbovirus antibody surveys performed in Rio de Janeiro (M. Bruno-Lobo et al., 1961, *An. Microbiol., 9:* 155-191; F. P. Pinheiro et al., 1975, *Intervirology, 5:* 93-96), the last one using neutralizing antibodies, showed immunity to St. Louis encephalitis, Yellow fever, Ilhéus and Bussuquara viruses in the same area. The present paper is the first detection of Piry virus neutralizing antibodies in Rio de Janeiro, including 17 out of 121 persons examined, which were born and always lived in the area (Table). This percentage of 14% is similar to those reported in the neighbouring states of S. Paulo and Minas Gerais (L. T. M. Figueredo et al.; J. Tavares Neto et al., *loc. cit.*).

Although 45 autochthonous children less than nine years old have been tested, only one was positive, suggesting low circulation of Piry

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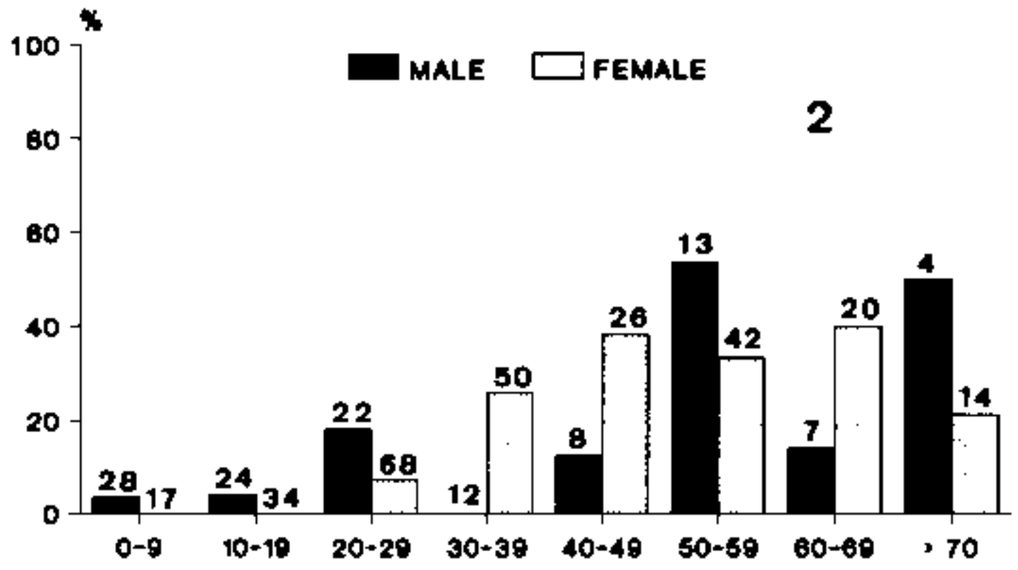
virus in the last years; the other positive people were fairly distributed by age and the presence of 4 persons more than 60 years old, indicate that Piry virus must be present since long time in the area (Figs 1, 2).

The antibodies found in the population which has lived in other parts of the country, where they may have been infected, pointed out for the presence of Piry virus in different parts of Brazil.



Figs 1, 2: percentage of positive individuals for Piry virus neutralizing antibodies living in Jacarepaguá, Rio de Janeiro, in both sexes, and by sex and age, respectively; the number of individuals tested is shown at the top of the bars.

TABLE

Neutralization antibodies titers to Piry virus in sera of positive individuals living in different localities in the county of Jacarepaguá, Rio de Janeiro

Person	Age	Sex	Profession	Locality	Result: ILN
A.C.C.	72	F	Housemaid	Estrada Boca do Mato	<5.0; >3.2
A.C.O.	58	F	Housewife	Granjas Calabria	>4.7
A.C.S.[a]	46	M		Granjas Calabria	>2.7
A.D.M.	27	F	Comercializer	Vargem Grande	<4.8; >3.4
A.G.	26	M		Rio Bonito	<5.2; >2.8
A.G.R.	70	F		Vargem Grande	<4.8; >3.2
A.L.S.	59	F	Housemaid	Recreio	<4.5; >3.4
A.M.S.	30	F	Civil servant	Vargem Grande	<4.5; >3.5
A.P.C.	69	F	Housemaid	Vargem Grande	<4.5; >4.0
A.P.N.[a]	65	F	Housemaid	Estrada dos Bandeirantes	<4.6; >3.9
A.R.S.	51	M		Recreio	<4.5; >4.0
A.S.S.	58	M	Landman	Granjas Calabria	>2.7
B.J.P.	85	M		Caminho do Portello	>3.1
C.C.	68	F	Housemaid	Vargem Grande	<4.5; >3.6
C.C.S.[a]	68	F	Housemaid	Vargem Grande	<4.5; >4.0
C.V.N.L.	26	F		Recreio	<4.5; >4.0
D.A.	53	F	Housemaid	Estrada dos Bandeirantes	<4.8; >3.6
D.D.S.	41	F	Housemaid	Vargem Grande	<4.8; >3.7
D.F.	58	M		Vargem Pequena	<4.5; >3.6
D.G.D.	51	F	Housemaid	Vargem Grande	<4.5; >3.6
E.R.S.[a]	66	F	Housewife	Taquara	<4.5; >4.0
E.T.S.	23	F		Recreio	<5.0; >3.2
G.M.	49	F	Housewife		<4.6; >3.6
G.S.L.	31	F		Curicica	<4.5; >3.4

cont.

I.F.O.	55	F	Woman servant	Recreio	<5.0; >3.4
I.M.J.	41	F		Taquara	<4.5; >4.0
J.A.E.	28	M		Vargem Pequena	<4.5; >3.9
J.A.S.	55	F	Housemaid	Vargem Grande	>2.7
J.B.O.	59	F	Housemaid	Vargem Grande	<4.5; >3.6
J.M.G.[a]	71	M	Carpenter	Benvindo Novaes	>4.7
J.R.M.	29	M		Vargem Grande	>4.4
J.R.S.	26	M		Estrada dos Bandeirantes	<5.0; >3.1
L.F.A.O.[a]	7	M	Student	Vargem Grande	<4.5; >4.0
L.F.M.	35	F		Recreio	<4.5; >3.6
L.G.L.[a]	54	M		Benvindo Novaes	>3.0
L.H.S.	27	F		Restinga	<4.5; >3.7
L.M.L.[a]	53	F	Housewife	Benvindo Novaes	>3.8
L.V.V.	49	F		Vargem Pequena	<4.5; >3.4
M.A.F.D.	26	F		Rio Bonito	<4.5; >3.9
M.A.G.	35	F	Housewife	Vargem Grande	<5.5; >2.6
M.A.S.F.[a]	32	F	Housewife	Granjas Calabria	>2.6
M.D.F.[a]	50	F	Housewife	Benvindo Novaes	>4.8
M.F.C.	70	F	Housemaid	Estrada dos Bandeirantes	<4.5; >3.7
M.G.M.[a]	34	F	Housewife	Recreio	<5.0; >3.5
M.G.P.	54	F		Recreio	<4.6; >3.9
M.G.S.[a]	46	F	Housewife	Granjas Calabria	>2.6
M.G.S.	61	F		Vargem Grande	<4.5; >3.6
M.G.S.[a]	43	F		Barra da Tijuca	<5.8; >2.7
M.J.D.	69	F		Taquara	<4.5; >4.0
M.J.S.L.	49	F	Housemaid	Vargem Grande	<4.5; >4.0
M.L.B.O.	34	F	Housemaid	Rio Morto	<4.5; >3.3
M.L.S.	54	F	Housemaid	Rio Bonito	<4.5; >3.7
M.N.S.	32	F		Vargem Pequena	<4.5; >3.7
M.S.M.	34	F		Vargem Grande	<4.6; >3.4
O.L.T.[a]	55	M	Tiller	Caminho do Portello	>3.3
R.I.[a]	32	F	Civil servant	Rio Bonito	<4.5; >3.3
R.S.	12	M	Studant	Barra da Tijuca	<5.6; >3.1
R.S.A.	60	F	Housemaid	Vargem Grande	<4.5; >4.0
R.V.	67	M		Campo Grande	<4.5; >3.5
S.C.J.	59	M	Gardener	Rua Pedro Afonso	<4.5; >3.9
S.D.M.A.	40	F	Housemaid	Barra da Tijuca	<4.5; >3.7
S.D.O.	43	F	Housemaid	Vargem Grande	<4.5; >3.7
S.M.S.	31	F		Camorim	<4.5; >4.3
S.P.D.	34	F		Taquara	<4.8; >3.7
S.R.S.	50	M	Landman	Granjas Calabria	>4.2
V.G.S.	52	M	Man servant	Vargem Grande	<6.2; >2.5
V.M.C.	34	F		Av. das Americas	<4.5; >3.7
Z.A.S.[a]	28	F		Vargem Grande	<4.6; >4.2
Z.R.R.[a]	52	F	Housemaid	Vargem Grande	<4.5; >4.3

a: individuals that were born and have always lived in Rio de Janeiro state.