



MAT

IgM : ( ) MAT  
 IgM (LDS) IgM  
 (DST)  
 (IHA) ( )

( )  
 (Outbreak) (Weil's disease)

Archive of SID

( )

( )

MAT .

) MAT ( )  
 (

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MAT

/

(Outbreak)

( ) /

MAT

/

IgM IgG

SERION-ELISA Classic Leptospira  
Institut Virion / Serion GmbH

IgM

: Leptospira interrogans  
L. copenhagenil L. icterohaemorrhagiae  
L. Bratislava L. Pomona L. canicola  
L. sejroe L. hebdomadis L. grippotyphosa  
L. hardjo L. tarassovi L. bataviae

IgM

(SERION Rheumatoid

Factor Absorbent Z200)

(Cold box)

IgG

(>9 U /ml)

LgM  
(>20 U/ml)

SPSS

IgG

( / ) ( / )

( / ) (P> / ) p< /

) IgG IgM (P< / /

) (

IgM ( IgG IgM )

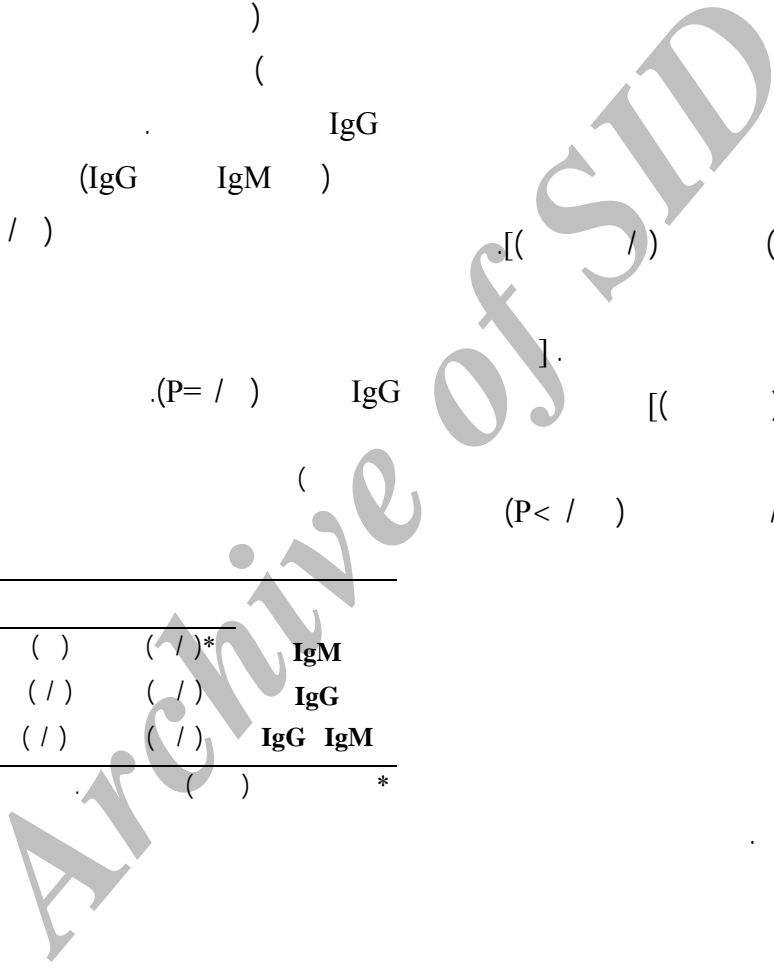
(P> / ) [( / ) ( / ) ]

[ ( ) ( ) ]

(P= / ) IgG / ± /

( (P< / ) / ± /

P. value	
/ ( ) ( / )*	<b>IgM</b>
N.S. ( / ) ( / )	<b>IgG</b>
/ ( / ) ( / )	<b>IgG IgM</b>
( )	*



( )

( )

(P< / )

(P< / )

/ ) IgM (

( )

( ) / IgM (P= / )

IgM . (P < / )

/ / ( )  
( ) IgG IgM  
) ( ) /  
MAT ( (P < / / )  
/ / ( ) IgG IgM  
( ) IgG

/  
IgM / MAT / IgM % IgM  
( )  
( )  
MAT  
MAT  
IgM:( )  
( ) IgM IgG  
( )  
( ) IgM  
( ) IgG  
( )

/ ( )  
IgG  
IgM

.( )

IgG IgM

CCHF (RVF)

.( )

.( )

## References :

1. Tappero JW, Ashford AD, Perkins BA. Leptospirosis. In: Mandell GL, Bennet JE, Dolin R, eds. Principles and practice of infectious diseases. 5<sup>th</sup> ed. Churchill Livingstone, 1999, 2495-501.
2. Feigin RD, Anderson DC. Leptospirosis. In: Feigin RD, Cherry JD, eds. Textbook of pediatric infectious diseases. 4<sup>th</sup> ed. Philadelphia, W.B. Saunders, 1998:1529-42.
3. Levett PN. Leptospirosis. Clin Microbiol Rev 2001; 14:296-326.
4. Vinetz JM. Leptospirosis. Curr Opin Infect Dis 2001;14:527-38.
5. Cole JR, Sulzer CR, Pursell AR. Improved microtechnique for the leptospiral microscopic agglutination test. Appl Microbiol 1973;25:976-80.
6. Cumberland PC, Everard COR, Weeler JG, et al. Persistence of anti-leptospiral IgM, IgG and agglutinating antibodies in patients presenting with acute febrile illness in Barbados 1979-1989. Eur J Epidemiol 2001;17:601-8.
7. Terpstra WJ, Ligthart GS, Schoone GJ. ELISA for the detection of specific IgM and IgG in human leptospirosis. J Gen Microbiol 1985;131:377-85.
8. Bajani MD, Ashford DA, Bragg SL, et al. Evaluation of four commercially available serologic tests for diagnosis of Leptospirosis. J Clin Microbiol 2003;41:803-9.
9. Hudson DB. Leptospirosis of Domestic Animals. 2005 (Accessed June 2005 at <http://ianrpubs.unl.edu/animaldisease/g417.htm>).
10. Brandao AP, Camargo ED, da Silva ED, et al. Macroscopic agglutination test for rapid diagnosis of human leptospirosis. J Clin Microbiol 1998;36:3138-42.
11. Cinco M, Balanzin D, Banfi E. Evaluation of an immunoenzymatic test (ELISA) for the diagnosis of leptospirosis in Italy. Eur J Epidemiol 1992;8:677-82.
12. Gussenhoven GC, van der Hoorn WG, Goris MGA, et al. LEPTO dipstick, a dipstick assay for detection of Leptospira-specific immunoglobulin M antibodies in human sera. J Clin Microbiol 1997;35:92-7.
13. Levett PN, Whittington CU. Evaluation of the indirect hemagglutination assay for diagnosis of acute Leptospirosis. J Clin Microbiol 1998;39:11-14.
14. Terpstra WJ, Ligthart GS, Schoone GJ. Serodiagnosis of human Leptospirosis by enzyme-linked immunosorbent assay (ELISA). Zentbl Bakteriol Mikrobiol hyg 1 Abt Orig A 1980;247:400-05.
15. Winslow WE, Merry DJ, Pirc ML, et al. Evaluation of a commercial enzyme-linked immunosorbent assay for detection of immunoglobulin M antibody in diagnosis of human leptospiral infection. J Clin Microbiol 1997;35:1938-42.
16. da Silva MV, Camargo ED, Vaz AJ, et al. Immunodiagnosis of human Leptospirosis using saliva. Trans R Soc Trop Med Hyg 1992;86:560-1.
17. Silva MV, Camargo ED, Batista L, et al. Behaviour of specific IgM, IgG and class antibodies in human Leptospirosis during the acute phase of the disease and during convalescence. J Trop Med Hyg 1995;98:265-72.
18. Vitale G, La Russa C, Galioto A, et al. Evaluation of an IgM-ELISA test for the diagnosis of human leptospirosis. New Microbiol 2004;27:149-54.
19. World Health Organization. Human leptospirosis: guidance for diagnosis, surveillance and control. 2003.

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20. Sebek Z, Bashirbod H, Chaffari M, et al. The occurrence of leptospirosis in Iran. *J Hyg Epidemiol Microbiol Immunol* 1987;31:498-503.
21. Ebrahimi A, Alijani L, Abdollahpour GR. Serological survey of human leptospirosis in tribal areas of west central Iran. *Iran J Med Sci* 2003;28:93-5.
22. Rad MA, Zeinali A, Yousofi JV, et al. Seroepidemiologic study of canine leptospirosis in Tehran. Iran. *World Small Animal Veterinary Association World Congress- Vancouver 2001*.
23. Karande S, Bhatt M, Kellar A, et al. An observational study to detect leptospirosis in Mumbai, India, 2000. *Arch Dis Child* 2003;88:1070-5.
24. Trevejo RT, Rigau-Perez JG, Ashford DA, et al. Epidemic leptospirosis associated with pulmonary hemorrhage-Nicaragua, 1995. *J Infect Dis* 1998;178:1457-63.
25. Ko AI, Galvao Reis M, Ribeiro Dourado CM, et al. Urban epidemic of severe leptospirosis in Brazil. *Salvador leptospirosis study Group. Lancet* 1999;354: 820-5.
26. Everard CO, Bennett S, Edwards CN, et al. An investigation of same risk factor for severe leptospirosis on Barbados. *J Trop Med Hyg* 1992;95:13-22.
27. Sehgal SC, Sugunan AP, Vijaychari P. Outbreak of leptospirosis after the cyclone in Orissa. *Natl Med J India* 2002;15:22-3.
28. Mansour-Ghanaei F, Sarshad A, Fallah MS, et al. leptospirosis in Guilan, a northern province of Iran: assessment of the clinical presentation of 75 cases. *Med Sci Monit* 2005;11:219-23.
29. Glyn Davies F, Martin V. Recognizing Rift Valley Fever. *FAO Animal Health Manual/Rome*, 2003.
30. Bruce MC, Sanders EJ, Leake JA, et al. leptospirosis among patients presenting with dengue-like illness in Puerto Rico. *Acta Trop* 2005;96:36-46.
31. Karande S, Gandhi D, Kulkarni M, et al. Concurrent outbreak of leptospirosis and dengue in Mumbai India, 2002. *J Trop Pediatr* 2005;51:174-81.

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- 1- Tappero JW, Ashford AD, Perkins BA. Leptospirosis. In: Mandell GL, Bennett JE, Dolin R, eds. Principles and practice of infectious diseases. 1999:2495-501.
  - 2- Feigin RD, Anderson DC. Leptospirosis. In: Feigin RD, Cherry JD, eds. Textbook of pediatric infectious diseases. 1998:1529-42.
  - 3- Levett PN. Leptospirosis. Clin Microbiol Rev. 2001; 14:296-326.
  - 4- Vinetz JM. Leptospirosis. Curr Opin Infect Dis. 2001;14:527-38
  - 5- Cole JR, Sulzer CR, Pursell AR. Improved microtechnique for the leptospiral microscopic agglutination test. Appl Microbiol. 1973;25:976-980.
  - 6- Cumberland PC, Everard COR, Wheeler JG, et al. Persistence of anti-leptospiral IgM, IgG and agglutinating antibodies in patients presenting with acute febrile illness in Barbados 1979-1989. Eur J Epidemiol. 2001;17:601-8.
  - 7- Terpstra WJ, Ligthart GS, Schoone GJ. ELISA for the detection of specific IgM and IgG in human leptospirosis. J Gen Microbiol. 1985;131:377-385.
  - 8- Bajani MD, Ashford DA, Bragg SL, et al. Evaluation of four commercially available serologic tests for diagnosis of Leptospirosis. J Clin Microbiol. 2003;41:803-9.
  - 9- Hudson DB. Leptospirosis of Domestic Animals.  
<http://ianrpubs.unl.edu/animaldisease/g417.htm>.
  - 10- Levett PN. Leptospirosis. In Mandell GL, Bennett JE, Dolin R, eds. Principles and practice of Infectious Diseases. 2005:2789-2794.
  - 11- Speelman P. Leptospirosis. In: Kasper DL, Braunwald E, Fauci AS, eds. Harrison's Principles of Internal Medicine. 2005:988-991.
  - 12- Brandao AP, Camargo ED, da Silva ED, et al. Macroscopic agglutination test for rapid diagnosis of human leptospirosis. J Clin Microbiol. 1998;36:3138-42.
  - 13- Cinco M, Balanzin D, Banfi E. Evaluation of an immunoenzymatic test (ELISA) for the diagnosis of leptospirosis in Italy. Eur J Epidemiol. 1992;8:677-682.
  - 14- Gussenhoven GC, van der Hoorn MA, WG, Goris MGA, et al. LEPTO dipstick, a dipstick assay for detection of Leptospira-specific immunoglobulin M antibodies in human sera. J Clin Microbiol. 1997;35:92-97.
  - 15- Levett PN, Whittington CU. Evaluation of the indirect hemagglutination assay for diagnosis of acute Leptospirosis. J Clin Microbiol. 1998;39:11-14.
  - 16- Terpstra WJ, Ligthart GS, Schoone GJ. Serodiagnosis of human Leptospirosis by enzyme-linked immunosorbent assay (ELISA). Zentbl Bakteriol Mikrobiol hyg 1 Abt Orig A. 1980;247:400-405.
  - 17- Winslow WE, Merry DJ, Pirc ML, et al. Evaluation of a commercial enzyme-linked immunosorbent assay for detection of immunoglobulin M antibody in diagnosis of human leptospiral infection. J Clin Microbiol. 1997;35:1938-42.
  - 18- da Silva MV, Camargo ED, Vaz AJ, et al. Immunodiagnosis of human Leptospirosis using saliva. Trans R Soc Trop Med Hyg. 1992;86:560-561.
  - 19- Silva MV, Camargo ED, Batista L, et al. Behaviour of specific IgM, IgG and class antibodies in human Leptospirosis during the acute phase of the disease and during convalescence. J Trop Med Hyg. 1995;98:265-272.
  - 20- Vitale G, La Russa C, Galioto A, et al. Evaluation of an IgM-ELISA test for the diagnosis of human leptospirosis. New Microbiol. 2004;27:149-54.
  - 21- World Health Organization. Human leptospirosis: guidance for diagnosis, surveillance and control. 2003.
  - 22- Sebek Z, Bashirbod H, Chaffari M, et al. The occurrence of leptospirosis in Iran. J Hyg Epidemiol Microbiol Immunol. 1987;31:498-503.
  - 23- Ebrahimi A, Alijani L, Abdollahpour GR. Serological survey of human leptospirosis in tribal areas of west central Iran. I J M S. 2003;28:93-95.



- 
- 24- Rad MA, Zeinali A, Yousofi JV, et al. Seroepidemiologic study of canine leptospirosis in Tehran. Iran. World Small Animal Veterinary Association World Congress- Vancouver 2001.
  - 25- Karande S, Bhatt M, Kellar A. et al. An observational study to detect leptospirosis in Mumbai, India, 2000. Arch dis Child. 2003;88:1070-75.
  - 26- Trevejo RT, Rigau-Perez JG, Ashford DA, et al. Epidemic leptospirosis associated with pulmonary hemorrhage-Nicaragua, 1995. J Infect Dis. 1998;178:1457-63.
  - 27- Ko AI, Galvao Reis M, Ribeiro Dourado CM, et al. Urban epidemic of severe leptospirosis in Brazil. Salvador leptospirosis study Group. Lancet. 1999;354: 820-5.
  - 28- Everard co, Bennett S, Edwards CN, et al. An investigation of same risk factor for severe leptospirosis on Barbados. J Trop Med Hyg. 1992;95:13-22.
  - 29- Sehgal SC, Sugunan AP, Vijaychari P. Outbreak of leptospirosis after the cyclone in Orissa. Natl Med J India. 2002;15:22-3.
  - 30- Mansour-Ghanaei F, Sarshad A, Fallah MS, et al. leptospirosis in Guilan, a northern province of Iran: Assessment of the clinical presentation of 75 cases. Med Sci Monit. 2005;11:219-223.
  - 31- Glyn Davies F, Martin V. Recognizing Rift Valley Fever. FAO Animal Health Manual/Rome, 2003.
  - 32- Bruce MC, Sanders EJ, Leake JA, et al. leptospirosis among patients presenting with dengue-like illness in Puerto Rico. Acta Trop. 2005;96:36-46.
  - 33- Karande S, Gandhi D, Kulkarni M, et al. Concurrent outbreak of leptospirosis and dengue in Mumbai India, 2002. J Trop Pediatr. 2005;51:174-81

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