

DAFTAR PUSTAKA

1. MacKenzie, Palmer MB, Ster WL, White AP. Examining The Link Between Biofilm Formation And The Ability Of Pathogenic Salmonella Strains To Colonize Multiple Host Species. *Front. Vet. Sci.* 4, 1-19.2017.
2. Alba S, et al. Risk factors of typhoid infection in the Indonesian archipelago. *PLoS One* 11, 1-14 ;2016.
3. World Health Organization. Typhoid vaccines: WHO position paper, March 2018 - Recommendations. *Vaccine.* 2019 Jan 7;37(2):214-216. doi: 10.1016/j.vaccine.2018.04.022. Epub 2018 Apr 13. PMID: 29661581.
4. Khairunnisa S, Hidayat EM, Herardi R. Hubungan Jumlah Leukosit dan Persentase Limfosit terhadap Tingkat Demam pada Pasien Anak dengan Demam Tifoid di RSUD Budhi Asih Tahun 2018 – Oktober 2019', *Seminar Nasional Riset Kedokteran (SENSORIK)*, p. 10. 2020.
5. Normaidah, I. Review : Patogenesis Dan Diagnosa Laboratorium Demam Tifoid. *Klin. Sains J. Anal. Kesehat.* 8, 51-61;2020.
6. IDAI. Rekomendasi IDAI mengenai Pemeriksaan Penunjang Diagnostik Demam Tifoid. [Internet] 2017 [17 November 2023] <https://spesialis1.ika.fk.unair.ac.id/wpcontent/uploads/2017/03/Rekomendasi-IDAI-mengenai-Pemeriksaan-Penunjang-Diagnostik-Demam-Tifoid-1>
7. Ilham I, Nugraha J, Purwanta M. Deteksi IgM Anti Salmonella Enterica Serovar Typhi dengan Pemeriksaan Tubex TF dan Typhidot-M. *J. Biosains Pascasarj.* 19, 127.2017.
8. Sultana S, Maruf MAA, Sultana R, Jahan S. Laboratory diagnosis of enteric fever: A review update. *Bangladesh J Infect Dis* 3:43-51. doi: 10.3329/bjid.v3i2.33834.2016.

9. Storey HL, Huang Y, Crudder C, Golden A, Santos T, Hawkins KA. Metaanalysis of typhoid diagnostic accuracy studies: A recommendation to adopt a standardized composite reference. .[internet] 2015 [dikutip 10 Oktober 2023]PLoS One 10:e0142364. doi: 10.1371/journal.pone.0142364.
10. Hardianto D. Telaah Metode Diagnosis Cepat Dan Pengobatan Infeksi Salmonella typhi. J. Bioteknol. Biosains Indones. 6, 149 ;2019.
11. Pacific Biotekindo Intralab. TUBEX TF a magnetic semi quantitative rapid immunoassay test for typhoid fever diagnostic. Jakarta: PT Pacific Biotekindo Lab.2006.
12. Khanna A, Menka K, Karamjit SG.Comparative Evaluation of Tubex TF (Inhibition Magnetic Binding Immunoassay) for Typhoid Fever in Endemic Area. Journal of Clinical and Diagnostic Research, 14-17.2014.
13. Mimi M, Yulia I, Wisman T, Theodorus T. Ketepatan Uji Tubex TF® dalam Mendiagnosis Demam Tifoid Anak pada Demam Hari ke-4. Jurnal Kedokteran Dan Kesehatan FK Unsri 2014; 1(1): 7-11.2014.
14. Mweu E, English M. Typhoid Fever In Children In Africa. Trop Med Int Health 13(4):532-540. 2008
15. Yadav SK, Parihar G. A comparative study of Typhidot and Widal test for rapid diagnosis of typhoid fever. Int J Curr Microbiol Appl Sci. 4(5):34-8. 2015.
16. Parry CM, Hien TT, Dougan G, White NJ, Farrar JJ. Typhoid fever. N Engl J Med [internet] 2002 [dikutip 11 Oktober 2023]. 347:1770 -1782. http://dx.doi.org/10.1056/NEJMra_020201.
17. Waddington C. An outpatient, ambulant-design, controlled human infection model using escalating doses of Salmonella Typhi challenge delivered in sodium bicarbonate solution. Clin Infect Dis, Issue 347, pp. 1770 - 1782. 2014.

18. Udayakumar S. Comparative Study of Typhidot-M With Widal and Blood Culture in Diagnosis of Enteric Fever. *Indian J. Child Health* 04, 64-67 2017.
19. Richter LE, Carlos A, Beber DM. 主観的健康感を中心とした在宅高齢者における健康関連指標に関する共分散構造分析.
20. Islam K, Sayeed MA, Hossen E, Khanam F, Charles RC. et al. Comparison Of The Performance Of The TPTest, Tubex, Typhidot and Widal Immunodiagnostic Assays And Blood Cultures In Detecting Patients With Typhoid Fever In Bangladesh, *Includ.* 2016
21. Siba V. Evaluation of serological diagnostic tests for typhoid fever in Papua new guinea using a composite reference standard. *Clin. Vaccine Immunol.* 19, 1833-1837.2012.
22. Lee K, Runyon M, Herrman TJ, Phillips R, Hsieh J. Review of Salmonella detection and identification methods: Aspects of rapid emergency response and food safety. *Food Cont [internet]* 2015.[dikutip 11 Oktober 2023]. doi: 10.1016/j.foodcont.2014.07.011.
23. Tam FCH, Ling TKW, Wong KT, Leung DTM, Chan RCY. et.al. The TUBEX test detects not only typhoid-specific antibodies but also soluble antigens and whole bacteria. *J Med Microbiol. [internet]* 2008 [dikutip 10 Oktober 2023] doi: 10.1099/jmm.0.47365-0. PMID: 18287294.
24. IDL Biotech. Tubex-TF, Confidence In Typhoid Fever Diagnosis. Sweden. Jawetz, E, Melnick, J.L. and Adelberg, E.A. 1996. *Mikrobiologi Kedokteran.* Jakarta: EGC; 2011
25. Khan A, Nadeem M, Shamim S. Evaluation of Typhidot test in the diagnosis of enteric fever in symptomatic children keeping blood culture as gold standard. *Rawal Medical Journal*, 43(2), 220-223. 2018.
26. Tarupiwa A. Evaluation of Tubex-TF and onsite typhoid IgG/IgM combo rapid tests to detect salmonella enterica serovar typhi infection during a typhoid outbreak in Harare, Zimbabwe. *BMC Res. Notes* 8, 1-4 2015.

27. Salama RI, Said NM. Comparative Study of the Typhidot (Dot-EIA) versus Widal Test in Diagnosis of Typhoid Fever among Egyptian Patients. 91-98 [internet] 2019 [dikutip 24 September 2023]doi:10.4236/ojgas.96
28. Kaur J, Jain SK. Role Of Antigens And Virulence Factors Of Salmonella Enterica Serovar Typhi In Its Pathogenesis. Microbiological Research 167:199-210. 2012.
29. Khan S, Harish BN, Menezes GA, Acharya NS, Parija S. C. Early diagnosis of typhoid fever by nested PCR for flagellin gene of salmonella enterica serotype typhi. Indian J. Med. Res. 136, 850-854.2012.
30. Hatta M, Smits HL. Detection of Salmonella typhi by nested polymerase chain reaction in blood, urine, and stool samples. Am. J. Trop. Med. Hyg. 76, 139-143.2007.
31. Nandagopal B, et al. Prevalence of salmonella typhi among patients with febrile illness in rural and peri-urban populations of vellore district, as determined by nested PCR targeting the flagellin gene. Mol. Diagnosis Ther. 14, 107-112.2010.
32. Kumar A, Balachandran Y, Gupta S, Khare S, Suman. Quick PCR based diagnosis of typhoid using specific genetic markers. Biotechnol. Lett. 32, 707-712. 2010.
33. Sattar A, Yusuf M, Islam M, Jahan W. Journal of current and advance medical research. J. Curr. Adv. Med. Res. 1, 35-41.2014.
34. Storey HL, Huang Y, Crudder C, Golden A, Santos T, Hawkins KA. Metaanalysis of typhoid diagnostic accuracy studies: A recommendation to adopt a standardized composite reference. [internet] 2015 [dikutip 10 Oktober 2023]PLoS One 10:e0142364. doi: 10.1371/journal.pone.0142364.
35. Crump JA, Sjölund KM, Gordon MA, Parry CM. Epidemiology, Clinical Presentation, Laboratory Diagnosis, Antimicrobial Resistance, and Antimicrobial Management of Invasive Salmonella Infections. Clin

- Microbiol Rev.[internet] 2015 [dikutip 20 Oktober 2023] [http://dx.doi.28\(4\):901-37](http://dx.doi.28(4):901-37)
36. Koshiol J. Salmonella enterica serovar Typhi and gallbladder cancer: a case-control study and meta-analysis. *Cancer Med.* 5, 3235-3310.2016.
 37. Bhutta ZA. Current concepts in the diagnosis and treatment of typhoid fever. *Br. Med. J.* 333, 78-82.2006.
 38. Gergely S. No 主観的健康感を中心とした在宅高齢者における健康関連指標に関する共分散構造分析Title. 3, 4-6.2024.
 39. Bhunia A. Foodborne microbial pathogens: Mechanisms and pathogenesis. *Foodborne Microbial Pathogens: Mechanisms and Pathogenesis.[internet]* 2008 [dikutip 20 September 2023] doi: 10.1007/978-0-387-74537-4. in.
 40. Tindall BJ. Nomenclature and taxonomy of the genus salmonella. *International journal of systematic and evolutionary microbiology, Microbiology Society*, 55(1), 521-524.2005.
 41. Achtman M. Multilocus sequence typing as a replacement for serotyping in *Salmonella enterica*. *PLoS Pathog.* 8.2012.
 42. Omwandho COA, Takayuki K. Salmonella enterica serovar Enteritidis: a Mini-review of Contamination Routes and Limitations to Effective Control. *Jarq-japan Agricultural Research Quarterly* 44 .2010.
 43. Gal-Mor O, Boyle, et al. Same Species, Different Diseases: How And Why Typhoidal And Non-Typhoidal *Salmonella enterica* Serovars Differ. *Frontiers In Microbiology.* 2(4), 436-442.2014.
 44. Widodo D. Demam tifoid. In: Sudoyo AW, Setiyohadi B, Alwi I, Simadibrata M, and Setiati S, editors. *Buku Ajar Ilmu Penyakit Dalam.* V ed.

45. SK Al-Khafaji, NMK. Al-Bayati A, OM Al-Dahmoshi H. Virulence Factors of Salmonella Typhi. *Salmonella spp. A Glob. Chall.* doi:10.5772/intechopen.95587.2021.
46. Alikhan NF, Zhou Z, Sergeant M, Achtman M. A genomic overview of the population structure of Salmonella. *PLoS Genet.* 14, 1-13.2018.
47. Heymans R, Vila A, Heerwaarden CAM, Jansen CCC, Castelijin GAA, et al. Rapid detection and differentiation of Salmonella species, Salmonella Typhimurium and Salmonella Enteritidis by multiplex quantitative PCR. *PLoS One.* 2015.
48. Brooks WA, Hossain A, Goswami D, Nahar K, Alam K, et al. Bacteremic typhoid fever in children in an urban slum, Bangladesh. *Emerg Infect Dis.* 2005.
49. Gu D, Wang Z, Tian Y, Kang X, Meng C, Chen X, Pan Z, Jiao X. Prevalence of Salmonella Isolates and Their Distribution Based on Whole-Genome Sequence in a Chicken Slaughterhouse in Jiangsu, China. *Front Vet Sci.* 7:29.2020.
50. Moudgil KD, Narang BS. Pathogenesis of typhoid fever. *Indian J Pediatr.* 1985
51. Bhandari J. Typhoid fever.[internet] 2012 [9 Oktober 2023]. Tersedia dari: <https://www.ncbi.nlm.nih.gov/books/NBK557513/#article-30719.r3>.
52. Pranata I. Persistence of anti-Salmonella O9 IgM as measured by Tubex TF may contribute to the over-diagnosis of typhoid fever in endemic areas. *Bali Med. J.* 11, 11-17.2022.
53. Nasronuddin N. Demam Tifoid Penyakit Infeksi di Indonesia, Solusi kini dan mendatang. Surabaya: Airlangga University Press; 2007
54. Tortora G, Berdell R, Case C. *Microbiology: an Introduction.* 11th ed. 2013
55. Jain, K. Kaur, J. & Jain, S., 2012. Role of antigens and virulence factors of salmonella enterica serovar typhi in its pathogenesis. *Microbiological research*, 1(1), pp. 199-210. in.

56. House D. Serology of typhoid fever in an area of endemicity and its relevance to diagnosis. *J. Clin. Microbiol.* 39, 1002-1007.2001.
57. Shaheen HI, Girgis N, Rodier G, Kamal K. Evaluation of the response of human humoral antibodies to salmonella typhi lipopolysaccharide in an area of endemic typhoid fever. *Clin. Infect. Dis.* 21, 1012-1013.1995.
58. Н. Л. Зайкина, А. М. Д. No Title МЕСТО АНЕСТЕЗИОЛОГИЧЕСКОГО ОБЕСПЕЧЕНИЯ В ДИАГНОСТИЧЕСКОМ АЛГОРИТМЕ СИНДРОМА ОБСТРУКТИВНОГО АПНОЭ – ГИПОПНОЭ СНА. *Вестник Анестезиологии И Реаниматологии* 13, 44-50.2016.
59. Hermans PW, Saha SK, Leeuwen WJ, Verbrugh HA, Belkum A, et al. Molecular typing of Salmonella typhi strains from Dhaka (Bangladesh) and development of DNA probes identifying plasmid-encoded multidrug-resistant isolates. *J Clin Microbiol.*1996.
60. Chowdhury J, Shumy F, Anam AM, Chowdhury MK. Current status of typhoid fever : a review. *Bangladesh Med. J.* 43, 106-111.2014.
61. Ajibola O, Mshelia MB, Gulumbe BH, Eze AA. Typhoid fever diagnosis in endemic countries: A clog in the wheel of progress *Med.* 54, 1-12.2018.
62. Waddington C. An outpatient, ambulant-design, controlled human infection model using escalating doses of Salmonella Typhi challenge delivered in sodium bicarbonate solution. *Clin Infect Dis, Issue* 347, 2014.
63. Hoffman SL. Typhoid Fever. In: Strickland GT. Editor. *Haunter's tropical medicine.* 7th ed Philadelphia WB Saunders Co. 2002.
64. Sudoyo A. W. *Buku Ajar Ilmu Penyakit Dalam Jilid 3.* Jakarta: Fakultas Kedokteran Universitas Indonesia; 2010
65. Olopoenia LA, King AL. Widal Agglutination test-100 years later : still plagues by controversy. *Postgrad Med,* 76(892):80-4. 2000.

66. Beacon. Diagnostics Pvt. Ltd. Widal Test Kit.[internet] 2012 [14 Oktober 2023]. Tersedia dari: <https://www.medistorebd.com/product/widal-test-kit-beacon/>.
67. LLP G. Understanding the Widal Test: What You Need to Know. [internet] 2018 [14 Oktober 2023]. Tersedia dari: <https://gunjanlab.com/know-your-blood-tests/f/understanding-the-widal-test-what-you-need-to-know>.
68. Alfiah Rizqi Ramadhanti. Systematic Review: Uji Diagnostik Tubex Dan Typhidot Dibandingkan Dengan Kultur Darah Sebagai Baku Emas Pemeriksaan Demam Typhoid Naskah Publikasi. Fak. Ilmu Kesehat. Univ. 'Aisyiyah Yogyakarta 1-15.2020.
69. Vaxcorp Indonesia. Tubex Test (Anti Salmonella IgM).[internet] 2018[14 Oktober 2023]. Tersedia dari: <https://clinic.vaxcorpindo.com/tubex-test-anti-salmonella-igm/>.
70. Salama RI, Said NM. Comparative Study of the Typhidot (Dot-EIA) versus Widal Test in Diagnosis of Typhoid Fever among Egyptian Patients. 91-98 [internet] 2019 [dikutip 24 September 2023]doi:10.4236/ojgas.96
71. Reszon Diagnostics International Sdn. Bhd. Dot EIA test for specific detection of IgG & IgM to Salmonella typhi. Malaysian. 2011.
72. Rani E, Kotpal R, Kumar. Comparison of rapid serological diagnostic test in diagnosing typhoid fever in a tertiary care centre in western Uttar Pradesh. Indian J. Microbiol. Res. 8, 49-52.2021.
73. Hardi S, Socharyo, Kamadi E. The Diagnostic Value of the Widal Test in Typhoid Fever Patients. Typhoid fever : Profile, Diagnostic, and Treatment in 2001. 1st ISAC International Symposium.Jakarta: Acta Medica Indonesia.2002.
74. Baker S, Favorov M, Dougan G.Searching for the elusive typhoid diagnostic. BMC Infect Dis, I(10). 2010.

75. Crump J, Sjolund KM, Gordon M, Parry C. Epidemiology, clinical presentation, laboratory diagnosis, antimicrobial resistance, and antimicrobial management of invasive Salmonella infections. Clin Microbiol Rev. 2015.
76. World Health Organization. Background document: The diagnosis, treatment and prevention of typhoid fever. Geneva: Communicable Disease Surveillance and Response Vaccines and Biologicals. WHO. 2003.
77. Wain J, Hendriksen RS, Mikoleit ML, Keddy KH, Ochiai RL. Typhoid Fever. Lancet, Vol 385. 2015.
78. Medicallabnotes. Salmonella Typhi: Introduction, Identification Features, Keynotes, and Salmonella Footages. [internet] 2020 [23 Oktober 2023] Tersedia dari: <https://medicallabnotes.com/salmonella-typhi-introduction-identification-features-keynotes-and-salmonella-footages/#more-2210>.
79. WHO.[Internet] 2018 {21 September 2023}. Tersedia dari: https://www.who.int/news-room/factsheets/detail/typhoid?gclid=CjwKCAiAx_GqBhBQEiwAIDNAZhoQZHcPIGGu8ksKBRKVBuDw06emv5ORFC40dm73uzMdTdi5_b2aBoCHFUQAvD_BwE.
80. Andualem G. A Comparative study of widal test blood culture in the diagnosis of typhoid fever in febrile patients. BMC Research Note Issue 7. 2014
81. Sheikh A. In vivo expression of Salmonella enterica serotype typhi genes in the blood of patients with typhoid fever in Bangladesh. PNTD. 2011.
82. Sucipta A. Baku emas pemeriksaan laboratorium demam tifoid pada anak. Jurnal Skala Husada. 2015
83. Sudoyo AW. Buku Ajar Ilmu Penyakit Dalam. Indonesia : Jakarta: Interna 181 Publishing; 2009.

84. Bourbeau PP, Pohlman JK. Three days Incubation May Be Sufficient for Routine Blood Cultures with BacT/Alert FAN Blood Culture Bottles. *J. Clin. Microbiol.* Vol. 39, No. 6:2079-2082. 2001.
85. Ali A, et al. Multiplex PCR for differential diagnosis of emerging typhoidal pathogens directly from blood samples. *Epidemiol. Infect.* 137, 102-107.2009.
86. Munir T, Lodhi M, Ali S, Zaidi SBH, Razak S. Early diagnosis of typhoid by PCR for FliC-d gene of *Salmonella typhi* in patients taking antibiotics. *J. Coll. Physicians Surg. Pakistan* 25, 662-666.2015.
87. Marmioli N, Maestri E. Polymerase Chain Reaction (PCR). *Food Toxicants Anal. Tech. Strateg. Dev.* 5, 147-187.2007.
88. Tiwaskar M. Cefixime-ofloxacin Combination in the Management of Uncomplicated Typhoid Fever in the Indian Community Setting. *J. Assoc. Physicians India* 67, 75-80. 2019.
89. Setiati S, Alwi I, Sudoyo AW, Simadibrata M, Setiyohadi B, et al. *Buku Ajar Ilmu Penyakit Dalam. Edisi Keenam. Jilid I, 6th ed.* Jakarta : Interna Publishing; 2014
90. Huang DB, DuPont HL. Problem pathogens: Extra-intestinal complications of *Salmonella enterica* serotype Typhi infection. *Lancet Infect. Dis.* 5, 341-348.2005.
91. Gunn JS. Gallbladder Persistence. *Trends Microbiol* 22, 648-655 2014.
92. Soedarmo SSP, Garna H, Hadinegoro SRS, Satari HI. *Buku Ajar Infeksi & Pediatri Tropis Edisi Kedua, Kedua. ed.* Ikatan Dokter Anak Indonesia (IDAI), Jakarta;2008.
93. Wain J, Hien TT, Connerton P, Ali T, Parry CM, et al. Molecular typing of multiple-antibiotic-resistant *Salmonella enterica* serovar Typhi from Vietnam: application to acute and rel. 1999.
94. Hermans PW, Saha SK, Leeuwen WJ, Verbrugh HA, Belkum A, et al. Molecular typing of *Salmonella typhi* strains from Dhaka (Bangladesh)

and development of DNA probes identifying plasmid-encoded multidrug-resistant isolates. *J Clin Microbiol*. 1996.

95. Marmion DE, Naylor GR, Stewart IO. Second attacks of typhoid fever.[internet] 1953 [dikutip 26 Oktober 2023] doi.org/10.1017/S00221724 00015680.
96. Caygill CP, Braddick M, Hill MJ, Knowles RL, Sharp JC. The association between typhoid carriage, typhoid infection and subsequent cancer at a number of sites. [internet] 1995 [dikutip 16 November 2023] doi :org/10.1097/00008469-199504000-00010.
97. Welton JC, Marr JS, Friedman SM. Association between hepatobiliary cancer and typhoid carrier state. *Lancet* [internet] 1979 [dikutip 13 Oktober 2023] doi.org/10.1016/S0140-6736(79)91315-1.
98. Braddick MR, Crump BJ, Yee ML. How long should patients with *Salmonella Typhi* or *Salmonella Paratyphi* be followed-up A comparison of published guidelines. *J Public Health Med* 13:101-107. 1991.
99. Losonsky GA, Ferreccio C, Kotloff KL, Kaintuck S, Robbins JB, et al. Development and evaluation of an enzyme-linked immunosorbent assay for serum Vi antibodies for detection of chronic *Salmonella Typhi* carriers. *J Clin Microbiol* 25:2266 -2269. 1987.
100. Lin YC, Becke JM, Groves C, Lim BP, Israel E, et al. Restaurant-associated outbreak of typhoid fever in Maryland: identification of carrier facilitated by measurement of serum Vi antibodies. *J Cl*. 1988.
101. Nolan CM, Feeley JC, White PC, Hambie EA, Brown SL, et al. Evaluation of a new assay for Vi antibody in chronic carriers of *Salmonella Typhi*. *J Clin Microbiol* 12:22-26. 1980.
102. Engleberg NC, Barrett TJ, Fisher H, Porter B, Hurtado E, et al. Identification of a carrier by using Vi enzyme-linked immunosorbent assay serology in an outbreak of typhoid fever in an Indian reservation. *J Clin Microbiol* 18:1320 -1322. 1983.

103. Gupta A, Thanh NT, Olsen SJ, Sivapalasingam S, My Trinh TT, et al. Evaluation of community-based serologic screening for identification of chronic Salmonella Typhi carriers in Vietn. 2006.
104. Nath G, Mauryal P, Gulati AK, Singh TB, Srivastava R, et al. Comparison of Vi serology and nested PCR in diagnosis of chronic typhoid carriers in two different study populations in typhoid endemic area of India. Southeast Asian J Trop. 2010
105. World Health Organization. Typhoid vaccines: WHO position paper, March 2018 - Recommendations. Vaccine. 37(2):214.2018.
106. Cruickshank R. Medical Microbiology: A Guide to the Laboratory Diagnosis and Control of Infection, Edinburgh: E & S Livingstone Ltd. 1968.
107. Boom R, Sol CJ, Salimans MM, Jansen CL, Wertheim-van Dillen PM, van der Noordaa J. Rapid and simple method for purification of nucleic acids. J Clin Microbiol 29: 496-503.1990
108. Song JH, Cho H, Park MY, Na DS, Moon HB, Pai CH. Detection of Salmonella typhi in the blood of patients with typhoid fever by polymerase chain reaction. J Clin Microbiol 31: 1439-1443. 1993.
109. Frankel G, Newton SM, Schoolnik GK, Stocker BA. Unique sequences in the region VI of the flagellin gene of Salmonella typhi. Mol Microbiol 13: 1379-1383. 1998.
110. Anggraini H. Faktor-faktor yang Berhubungan Dengan Kejadian Demam Tifoid pada Anak yang dirawat di RSUD Dr.H. Soemarno SostroatmodjoKabupaten Kapuas Provinsi Kalimantan Tengah pada Tahun 2012. Skripsi. Universitas Islam Indonesia, 2012.
111. Nurvina WA. Hubungan antara Sanitasi Lingkungan, Hygiene Perorangan, dan Karakteristik Individu dengan Kejadian Demam Tifoid pada Masyarakat di Wilayah Kerja Puskesmas KEdungmundu Kota Semarang, Tahun 2012. Skripsi, Universitas Diponegoro Semarang, 2012.

112. Ristam MZ. Hubungan Karakteristik Penderita dengan Kejadian Demam Tifoid pada Pasien Rawat Inap di RSUD Salewangang Maros. Skripsi, Universitas Airlangga Surabaya, 2010.
113. Joshi BG, Keyal K, Pandey RS. Clinical profile and sensitivity pattern of salmonella serotypes in children: a hospital based study. *J Nepal Paediatr Soc* 31(3), 180-3.2011.
114. Devaranavadagi RA, S Srinivasa. Clinical Profile of Typhoid Fever in Children. *Int. J. Contemp. Pediatr.* 4, 1067-1073.2017.
115. Laishram N. Clinical profile of enteric fever in children. 5(2):114-116. *J Evol. Med Dent Sci.* 5 (2), 114-116.2016.
116. Banu A, Rahman MJ. Clinical Profile of Typhoid Fever in Children in Northern Areas of Bangladesh. *Dinajpur Med Col J* 9(1), 53-8. 2016.
117. Raj C. Clinical profile and antibiotic sensitivity pattern of typhoid fever in patients admitted to pediatric ward in a rural teaching hospital. *Int J Med Res Health Sci.* 3(2):245-8.2014.
118. Lefebvre N, Gning SB, Nabeth P, Ka S, Ba-Fall K, Rique M et al. Clinical and laboratory features of typhoid fever in Senegal: A 70-case study. *Med Trop (Mars).* 65(6):543-8.2005.
119. Ishaq U, Malik J, Asif M, et al. Eosinopenia in Patients with Typhoid Fever: A Case Control Study. *Cureus* 12(9): e10359. DOI 10.7759/cureus.10359.2020
120. AT, I Idhayu, Adeputri Tanesha, Chen, Lie Khie, Suhendro. The Difference of C-Reactive Protein Levels in Acute Fever caused by Dengue and Typhoid Infections,' *Jurnal Penyakit Dalam Indonesia: Vol. 3: Iss. 3, Article 5.* DOI: 10.7454/jpdi.v3i3.2016.
121. Maheswari V, Navinchandra MK, Ramnani VK SSA. Comparative Evaluation of Different Diagnostic Modalities in the Diagnosis of Typhoid Fever Using a Composite Reference Standard : A Tertiary Hospital Based Study in Central India. 1-4.doi:10.7860/JCDR/2016/20426.8684.2016.

122. Jesudason MV, SS. Prospective evaluation of a rapid diagnostic test Typhidot for typhoid fever. *Indian J Med Res.* 123, 2006.
123. Baragundi M, Vishwanath G, Hanumanthappa A, et al. Comparative study of blood culture and Staphylococcal coagglutination test in clinically suspected cases of enteric fever. 2010;28:417-18. *Indian J Med Microbiol.* 28, 417-18.2010.
124. Wain, JWain, et al. Quantitation of bacteria in blood of typhoid fever patients and relationship between counts and clinical features, transmissibility, and antibiotic resistance. *J. Clin. Microbiol.* 36, 1683-1687.1998.
125. Cockerill FR, et al. 2nd; Wilson, W. R. Optimal testing parameters for blood cultures. *Clin. Infect. Dis. Off. Publ. Infect. Dis. Soc. Am.* 38, 1724-1730.2004.
126. Crump JA, Sjölund-Karlsson M, Gordon MA, Parry CM. Epidemiology, Clinical Presentation, Laboratory Diagnosis, Antimicrobial Resistance, and Antimicrobial Management of Invasive Salmonella. *Infect. Clin. Microbiol.* 28, 901-937. 2015.
127. Chaudhry R, et al. Rapid diagnosis of typhoid fever by an in-house flagellin PCR. *J. Med. Microbiol.* 59, 1391-1393. 2010.
128. Liu Y,et al. Molecular typing of Salmonella enterica serovar Typhi isolates from various countries in Asia by a multiplex PCR assay on variable-number tandem repeats. *J. Clin. Microbiol.* 41, 4388-4394.2003.
129. Lelei W, Nyerere A, Onsare RS, Kariuki S. Performance of TUBEX® TF IgM Antibody Test Against Culture to Detect Typhoid Fever Among Hospitalized Patients in Nairobi Country. *Biol. J. Agric. Healthc.* 9 (4), 48-54.2019.
130. Marleni M, Iriani Y, Tjuandra W, Theodorus. Ketepatan Uji Tubex TF ® dalam Mendiagnosis Demam Tifoid Anak pada Demam Hari ke-4. *J. Kedokt. dan Kesehat. Publ. Ilm. Fak. Kedokt. Univ. Sriwij.* 1, 7-11.2014.

131. Setiyani E. Hubungan Antara Lama Demam Pasien Tifoid Dengan Kadar Igm Anti Salmonella Studi Cross Sectional Pada Pasien Demam Tifoid Rawat Inap Di Rsud Tugurejo Semarang.2014.
132. Rustandi. Demam Tifoid. Dalam: Imunologi Klinik. (Rumah Sakit Hasan Sadikin.2020
133. Lim PL, Tam FCH CY, JM. One-step 2-minute test to detect typhoidspecific antibodies based on particle separation in tubes. J Clin Microbiol. 36(8), 2271-8.1998.
134. Kubly J. Immunology WH. Freeman & Company.1992.
135. Prasetyo RV. Metode Diagnostik Demam Tifoid pada Anak. Bagian Ilmu Kesehatan Anak FK Unair.2009.
136. Hussain A. Functional Characterization Of The Outer Membrane Protein Tolc Of Salmonella Enterica Subspecies Enterica Serovar Typhi And Its Association With Virulence. Universiti Sains Malaysia. Doi:10.1002/Nadc.20030510408.2018.
137. Heuer C, Stevenson MA. Diagnostic test validation studies when there is a perfect reference standard. OIE Rev. Sci. Tech. 40, 261-270.2021.
138. Shreffler J, Huecker MR. Diagnostic Testing Accuracy: Sensitivity, Specificity, Predictive Values and Likelihood Ratios. 2023 Mar 6. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. PMID: 32491423.
139. Wijedoru L, Mallett S, Parry CM. Rapid diagnostic tests for typhoid and paratyphoid (enteric) fever. Cochrane Database Syst. Rev. 2017.



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JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR 90245.



Contact Person: dr. Agussalim Bukhari, MMed, PhD, SpGK TELP. 081241850858, 0411 5780103, Fax : 0411-581431

LAMPIRAN 1

FORMULIR PERSETUJUAN SETELAH PENJELASAN (PSP) (INFORMED CONSENT)

Selamat pagi Bapak / Ibu /Saudara(i), saya dr. Eunike Jacqueline Salipadang, bermaksud untuk melakukan penelitian dengan Judul “Nilai Diagnostik Uji Tubex-Tf dan Typhidot Dalam Diagnosis Demam Tifoid Pada Anak.”

Adapun tujuan dari penelitian ini adalah untuk mengetahui nilai diagnostik (sensitivitas, spesifisitas, nilai duga positif dan nilai duga negatif) pemeriksaan Tubex-TF dan Typhidot dalam diagnosis demam tifoid pada anak di Makassar. Pemeriksaan Tubex-TF dan Typhidot merupakan metode pemeriksaan yang cepat dalam diagnosis demam tifoid. Adapun pemeriksaan Typhidot belum banyak dipakai di laboratorium-laboratorium layanan kesehatan di Makassar. Dari berbagai referensi, dikatakan sensitivitas dan spesifisitas pemeriksaan Typhidot baik dan tidak jauh berbeda dengan pemeriksaan Tubex-TF, sehingga sangat baik digunakan sebagai alternatif pemeriksaan. Pemeriksaan Typhidot memiliki kelebihan diantaranya mudah dikerjakan, harga pemeriksaan lebih terjangkau, dan dapat mendeteksi infeksi pada fase lanjutan dimana kadar antibodi IgM mungkin sudah tidak terdeteksi dari pemeriksaan yang ada sebelumnya. Adapun baku emas pada penelitian ini adalah pemeriksaan PCR yang memiliki sensitivitas dan spesifisitas yang baik sehingga tepat dibandingkan dengan pemeriksaan tes cepat Tubex-TF dan Typhidot.

Kami akan menanyakan dan mencatat identitas anak ibu/bapak (nama, tanggal lahir, jenis kelamin), juga beberapa pertanyaan seperti lama demam, gejala yang dialami, pendidikan dan pendapatan orang tua, dan pendidikan anak. Juga dilakukan pengukuran tinggi badan dan berat badan untuk mengetahui status gizi. Pengambilan sampel darah dilakukan pada subjek yang masuk kriteria inklusi, yaitu demam minimal 4 hari, ada gejala pada saluran cerna, dan bersedia ikut dalam penelitian, dan tidak ada kriteria eksklusi, yaitu telah mendapatkan terapi

antibiotik intravena dan tidak menderita gizi buruk. Semua biaya pemeriksaan akan ditanggung oleh peneliti. Penelitian ini menggunakan sampel yang juga digunakan pada penelitian Skoring Bakteremia Salmonella Tifoidal pada Anak, Kajian Khusus Eosinopenia, Eutaxin (CCL11), IL-6 dan TNF-alfa. Keikutsertaan pasien akan diberikan *gimmick* berupa bingkisan snack.

Sampel darah yang dibutuhkan sebanyak 5 ml untuk anak < 10 tahun dan 7 ml untuk > 10 tahun. Prosedur ini akan menimbulkan nyeri pada area pengambilan darah. Pada beberapa kasus proses ini juga dapat menimbulkan sedikit memar atau bengkak. Prosedur pengambilan darah dilakukan oleh tenaga laboran yang sudah terlatih dan secara hati-hati sesuai dengan SOP, sehingga diharapkan dapat meminimalkan efek samping. Jika efek samping terjadi, akan dilakukan tatalaksana sesuai SOP yang berlaku dan jika terjadi kerugian akan ditanggung oleh peneliti.

Keikutsertaan anak bapak/ibu dalam penelitian ini bersifat sukarela tanpa paksaan, sehingga bapak/ibu dapat menolak ikut atau berhenti terlibat dalam penelitian ini tanpa takut akan kehilangan hak untuk mendapat pelayanan kesehatan yang dibutuhkan oleh anak bapak/ibu. Untuk mengetahui secara mendetail mengenai penelitian ini atau ada hal-hal yang belum jelas, dapat menghubungi saya dengan nomor telpon 081354670748.

Semua data dari penelitian ini akan dicatat dan dipublikasikan tanpa membuka data pribadi anak ibu/bapak. Data pada penelitian ini akan dikumpulkan dan disimpan dalam file manual maupun elektronik, diaudit dan diproses serta dipresentasikan pada:

- Forum ilmiah Program Pendidikan Dokter Spesialis Terpadu Fakultas Kedokteran Universitas Hasanuddin.
- Publikasi pada jurnal ilmiah dalam maupun luar Negeri

Setelah membaca dan mengerti atas penjelasan yang kami berikan mengenai pentingnya dilakukan penelitian ini, maka kami mengharapkan bapak/ibu untuk menandatangani surat persetujuan mengikuti penelitian. Atas kesediaan dan kerja samanya, saya mengucapkan terima kasih. Identitas peneliti :

Nama : dr. Eunike Jacqueline Salipadang

Alamat : Kompleks Budi Daya Permai Blok H No.7

Telepon : 081354670748

Apabila bapak/ibu bersedia berpartisipasi, silakan menandatangani surat persetujuan mengikuti penelitian dan mengikuti protokol penelitian sampai selesai. Atas kesediaan bapak/ibu meluangkan waktu untuk mengikuti penjelasan ini, kami mengucapkan terima kasih.

Wassalam,
Peneliti,



dr. Eunike Jacqueline Salipadang



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Contact Person: dr. Agussalim Bukhari..MMed,PhD, SpGK TELP. 081241850858, 0411 5780103, Fax : 0411-581431

Lampiran 2

FORMULIR PERSETUJUAN ORANG TUA MENGIKUTI PENELITIAN SETELAH MENDAPAT PENJELASAN

Maka saya yang bertanda tangan di bawah ini, orang tua/ wali :

Nama :

Pekerjaan :

Alamat :

Setelah mendengar dan mengerti penjelasan yang diberikan oleh Ismail (Laboran) tentang penelitian yang akan dilakukannya, bersama ini secara sukarela mengizinkan anak saya :

Nama :

Jenis kelamin : Laki-laki / Perempuan

untuk diikutkan dalam penelitian ini.

Saya tahu bahwa saya mempunyai hak untuk menanyakan pada dr. Eunike Jaequeline apabila masih ada hal-hal yang belum jelas. Saya juga tahu bahwa saya tidak perlu merasa terpaksa mengikutkan anak saya dalam penelitian ini karena penolakan saya tidak akan mempengaruhi hak saya dan keluarga untuk mendapatkan pelayanan kesehatan.

Saya juga mengerti bahwa saya tidak perlu membayar semua biaya pemeriksaan yang ada hubungannya dengan penelitian ini, dan semua biaya perawatan dan pengobatan bila terjadi hal-hal yang tidak diinginkan akan dibiayai oleh peneliti, jika terjadi perselisihan/beda pendapat akan diselesaikan secara musyawarah (kekeluargaan).

Saya percaya bahwa keamanan dan kerahasiaan data penelitian akan terjamin dan saya dengan ini menyetujui semua data yang dihasilkan pada penelitian ini untuk disajikan dalam bentuk lisan maupun tulisan.

Makassar,

NO.	NAMA	TANDA TANGAN
1. ORANG TUAWALI
2. SAKSI I
3. SAKSI II

Penanggung Jawab Penelitian

Nama : dr. Eunike Jacqueline Salipadang

Alamat : Komp. Budi Daya Permai, Blok H/7, Kec. Tamalanrea, Makassar, Sulsel

Tlp : 081354670748

Penanggung Jawab Medis

Nama : dr. Ninny Meutia Pelupessy, Sp.A

. Alamat : Jl. Pengayoman Komp. Edelweis V/4, Kec. Panakkukang, Makassar, Sulsel

Tlp : 08124207664



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Contact Person: dr. Agussallim Bukhari..MMed,PhD, SpGK TELP. 081241850858, 0411 5780103, Fax : 0411-581431

REKOMENDASI PERSETUJUAN ETIK

Nomor : 280/UN4.6.4.5.31/ PP36/ 2024

Tanggal: 25 April 2024

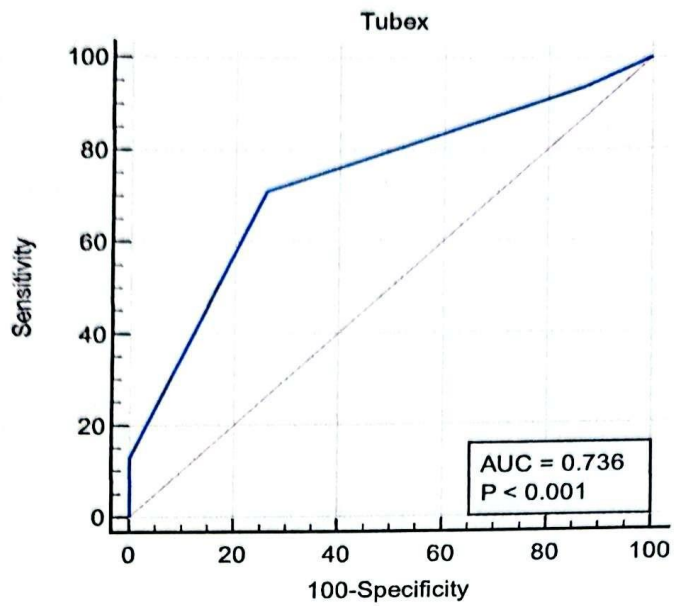
Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No Protokol	UH24030178	No Sponsor	
Peneliti Utama	dr. Eunike Jacqueline Salipadang	Sponsor	
Judul Peneliti	NILAI DIAGNOSTIK UJI TUBEX-TF DAN TYPHIDOT DALAM DIAGNOSIS DEMAM TIFOID PADA ANAK		
No Versi Protokol	1	Tanggal Versi	19 Maret 2024
No Versi PSP	1	Tanggal Versi	19 Maret 2024
Tempat Penelitian	RS Universitas Hasanuddin, RSUP Dr. Wahidin Sudirohusodo, RS dr. Tadjuddin Chalid, RS Cahaya Medika, RSUD Daya, RS Ibnu Sina, RSUD Labuang Baji Makassar		
Jenis Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal	Masa Berlaku 25 April 2024 sampai 25 April 2025	Frekuensi review lanjutan
Ketua KEP Universitas Hasanuddin	Prof. dr. Muh Nasrum Massi, PhD, SpMK, Subsp. Bakt(K)	Tanda tangan	
Sekretaris KEP Universitas Hasanuddin	dr. Firdaus Hamid, PhD, SpMK(K)	Tanda tangan	

Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Laporan SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari protokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan

ID	Name	Address	Phone	City	State	Zip	Age	Gender	Marital	Occupation	Income	Assets	Liabilities	Net Worth	Score	Rating	Status	Notes
29	John Doe	123 Main St	555-1234	New York	NY	10001	34	M	Married	Software Engineer	\$120,000	\$450,000	\$200,000	\$250,000	85	A	Active	Good
30	Jane Smith	456 Oak Ave	555-5678	Los Angeles	CA	90001	28	F	Single	Marketing Executive	\$80,000	\$300,000	\$150,000	\$150,000	78	B	Active	Fair
31	Robert Johnson	789 Pine St	555-9012	Chicago	IL	60601	55	M	Widowed	Retired Teacher	\$40,000	\$100,000	\$80,000	\$20,000	65	C	Retired	Fair
32	Emily White	321 Elm St	555-3456	San Francisco	CA	94101	31	F	Married	Product Designer	\$95,000	\$350,000	\$180,000	\$170,000	82	A	Active	Good
33	Michael Brown	654 Maple Dr	555-7890	Houston	TX	77001	42	M	Married	Sales Representative	\$65,000	\$250,000	\$120,000	\$130,000	75	B	Active	Fair
34	Sarah Davis	987 Cedar Ln	555-2345	Phoenix	AZ	85001	25	F	Single	UX Designer	\$70,000	\$280,000	\$140,000	\$140,000	79	B	Active	Good
35	David Wilson	101 Birch St	555-6789	Seattle	WA	98101	38	M	Married	Systems Administrator	\$85,000	\$320,000	\$160,000	\$160,000	80	B	Active	Good
36	Alice Taylor	202 Spruce Ave	555-0123	Portland	OR	97201	48	F	Married	Project Manager	\$75,000	\$290,000	\$150,000	\$140,000	77	B	Active	Fair
37	James Anderson	303 Fir St	555-4567	Denver	CO	80201	52	M	Married	Financial Analyst	\$60,000	\$220,000	\$110,000	\$110,000	72	B	Active	Fair
38	Maria Garcia	404 Redwood Dr	555-8901	San Diego	CA	92101	33	F	Married	Business Development	\$90,000	\$330,000	\$170,000	\$160,000	83	A	Active	Good
39	Christopher King	505 Sycamore Ln	555-2345	Minneapolis	MN	55401	45	M	Married	Operations Manager	\$70,000	\$270,000	\$140,000	\$130,000	76	B	Active	Fair
40	Stephanie Lee	606 Willow St	555-6789	San Jose	CA	95101	29	F	Married	Software Engineer	\$100,000	\$380,000	\$190,000	\$190,000	88	A	Active	Excellent
41	Andrew Miller	707 Ash Ave	555-0123	Philadelphia	PA	19101	37	M	Married	Operations Manager	\$80,000	\$310,000	\$160,000	\$150,000	80	B	Active	Good
42	Michelle Clark	808 Hickory Dr	555-4567	San Antonio	TX	78201	40	F	Married	Marketing Executive	\$65,000	\$260,000	\$130,000	\$130,000	75	B	Active	Fair
43	Kevin Lewis	909 Dogwood Ln	555-8901	San Francisco	CA	94101	35	M	Married	Software Engineer	\$90,000	\$340,000	\$180,000	\$160,000	82	A	Active	Good
44	Nancy Hall	1010 Magnolia St	555-2345	San Jose	CA	95101	47	F	Married	Business Development	\$75,000	\$290,000	\$150,000	\$140,000	77	B	Active	Fair
45	Brandon Young	2021 Poplar Ave	555-6789	San Diego	CA	92101	30	M	Married	Software Engineer	\$85,000	\$320,000	\$160,000	\$160,000	80	B	Active	Good
46	Karen Allen	3032 Chestnut Dr	555-0123	San Antonio	TX	78201	43	F	Married	Marketing Executive	\$70,000	\$270,000	\$140,000	\$130,000	76	B	Active	Fair
47	Joseph King	4043 Walnut Ln	555-4567	San Francisco	CA	94101	36	M	Married	Software Engineer	\$95,000	\$350,000	\$190,000	\$160,000	84	A	Active	Good
48	Christina Scott	5054 Olive St	555-8901	San Jose	CA	95101	41	F	Married	Business Development	\$75,000	\$290,000	\$150,000	\$140,000	77	B	Active	Fair
49	Timothy Adams	6065 Maple Ave	555-2345	San Diego	CA	92101	39	M	Married	Software Engineer	\$85,000	\$320,000	\$160,000	\$160,000	80	B	Active	Good
50	Rebecca Baker	7076 Cedar Dr	555-6789	San Antonio	TX	78201	44	F	Married	Marketing Executive	\$70,000	\$270,000	\$140,000	\$130,000	76	B	Active	Fair
51	Gregory Nelson	8087 Birch Ln	555-0123	San Francisco	CA	94101	32	M	Married	Software Engineer	\$90,000	\$340,000	\$180,000	\$160,000	82	A	Active	Good
52	Heather Hill	9098 Spruce St	555-4567	San Jose	CA	95101	46	F	Married	Business Development	\$75,000	\$290,000	\$150,000	\$140,000	77	B	Active	Fair
53	William Green	1009 Fir Ave	555-8901	San Diego	CA	92101	38	M	Married	Software Engineer	\$85,000	\$320,000	\$160,000	\$160,000	80	B	Active	Good
54	Olivia King	2020 Dogwood Dr	555-2345	San Antonio	TX	78201	42	F	Married	Marketing Executive	\$70,000	\$270,000	\$140,000	\$130,000	76	B	Active	Fair
55	Benjamin Lee	3031 Willow Ln	555-6789	San Francisco	CA	94101	34	M	Married	Software Engineer	\$90,000	\$340,000	\$180,000	\$160,000	82	A	Active	Good
56	Sophia White	4042 Redwood St	555-0123	San Jose	CA	95101	40	F	Married	Business Development	\$75,000	\$290,000	\$150,000	\$140,000	77	B	Active	Fair
57	Lucas Brown	5053 Sycamore Ave	555-4567	San Diego	CA	92101	37	M	Married	Software Engineer	\$85,000	\$320,000	\$160,000	\$160,000	80	B	Active	Good



Area under the ROC curve (AUC)

Area under the ROC curve (AUC)	0.736
Standard Error ^a	0.0583
95% Confidence interval ^b	0.630 to 0.826
95% Bootstrap CI ^c	0.629 to 0.835
z statistic	4.054
Significance level P (Area=0.5)	0.0001

^a Hanley & McNeil, 1982

^b Binomial exact

^c BC_a bootstrap confidence interval (1000 iterations; random number seed: 978).

Youden Index

Youden index J	0.4488
Associated criterion	>4
Sensitivity	70.97
Specificity	73.91

Criterion	Sensitivity	Specificity	+LR	-LR
≥ 0	100.00	0.00	1.00	
>0	93.55	13.04	1.08	0.49
>4	70.97	73.91	2.72	0.39
>6	12.90	100.00		0.87
>8	6.45	100.00		0.94
>10	0.00	100.00		1.00

