

## DAFTAR PUSTAKA

- Adamis D, Sharma N, Whelan PJ, Macdonald AJ. 2010. Delirium scales: a review of current evidence. *Aging & Mental Health* 14(5):543-555.
- Adiwinata R, Oktaliansah E, Maskoen TT. 2016. Angka kejadian delirium dan faktor risiko di Intensive Care Unit Rumah Sakit dr. Hasan Sadikin Bandung. *Jurnal Anestesi Perioperatif* 4:36-41.
- Aguiar FJ, Ferreira-Junior M, Sales MM, Cruz-Neto LM, Fonseca LA, Sumita NM, et al. 2013. C-reactive protein: clinical applications and proposals for a rational use. *Rev Assoc Med Bras* 59(1):85-92.
- Akili NB, Yortanli M, Mutlu H, Gunaydin YK, Koylu R, Akca HS, et al. 2014. Prognostic importance of neutrophil-lymphocyte ratio in critically ill patients: short and long term outcomes. *Am J Emerg Med* 32:1476-1480.
- Al Chalabi A and Miller CJ. 2003. Neurofilament and neurological disease. *Wiley online library* 25:346-355.
- Aliberti S, Bellelli G, Belotti M, Morandi A, Meesinesi G, Annoni G, et al. 2015. *Aging Clin Exp Res* 27(4):523-531.
- Aly WW, Abdul-Rahman SA, El Said SM, Bastawy SA. 2014. S100B and delirium in the geriatric acute care setting. *Advances in Aging Research* 3:1-5.
- Androsova G, Krause R, Winterer G, Schneider R. 2015. Biomarkers of postoperative delirium and cognitive dysfunction. *Frontiers in Aging Neuroscience* 7:1-16.
- Aronowski J, Ki-hyun Cho, Strong R and Grotta CJ. 1999. Neurofilament proteolysis after focal ischemia: when do cells die after experimental stroke? *Journal of cerebral blood flow and metabolism* 19:652-660.

- Ayob F, Lam E, Ho G, Chung F, El-Beheiry H, Wong J. 2019. Pre-operative biomarkers and imaging tests as predictors of post-operative delirium in non-cardiac surgical patients: a systematic review. *BMC Anesthesiology* 19(25):1-16.
- Bacioglu M, Maia LF, Preische O, Schelle J, Apel A, Kaeser SA. 2016. Neurofilament light chain in blood and CSF as marker of disease progression in mouse models and in neurodegenerative diseases. *Neuron* 91: 56-66.
- Boylan KB, Glass JD, Crook JE, Yang C, Thomas CS, Desaro P, et al. 2013. Phosphorylate neurofilament heavy subunit (pnf-H) in peripheral blood and CSF as a potential prognostic biomarker in amyotrophic lateral sclerosis. *J Neurol Neurosurg Psychiatry* 84(4):467-472.
- Breitbart W, Rosenfeld B, Roth A, Smith MJ, Gohen K, Passik S. 1997. The Memorial Delirium Assessment Scale. *Journal of Pain and Symptom Management* 13:128-137.
- Cerejeira J, Firmino H, Vaz-Serra A, Mukaetova-Ladinska EB. 2010. The neuroinflammatory hypothesis of delirium. *Acta Neuropathol* 119(6):737-754.
- Chu CL, Liang CK, Lin YT, Chow PC, Pan CC, Chou MY, et al. 2011. Biomarkers of delirium: well evidence or not? *Journal of Clinical Gerontology & Geriatrics* 2:100-104.
- Cinar MA, Balikci A, Sertoglu E, Mehmet AK, Serdar MA, Ozmenler KN. 2014. Role of CRP, TNF-a, and IGF-1 in delirium pathophysiology. *Archives of Neuropsychiatry* 51:376-382.
- Cole MG, Ciampi A, Belzile E, Zhong L. 2008. Persistent delirium in older hospital patients: a systematic review of frequency and prognosis. *Age and Ageing* 38:19-26.

- Dahlan, Sopiudin. 2009. Besar sampel dan cara pengambilan sampel dalam penelitian kedokteran dan kesehatan, Edisi 2. Jakarta: Salemba Medika.
- De Macedo RC, Tomasi CD, Giombelli VR, Alves SC, Bristot M, Locks MF, et al. 2013. Lack of association of S100B and neuron-specific enolase with mortality in critically ill patients. *Rev Bras Psiquiatr* 35(3):267-270.
- Dejong D, Jansen RW, Pijnenburg YA, Vangeel WJ, Borm GF, Kremer HP, et al. 2007. CSF neurofilament proteins in the differential diagnosis of dementia. *J Neurol Neurosurg Psychiatry* 78:936–938.
- De Rooij SE, van Munster BC, Korevaar JC, Levi M. 2007. Cytokines and acute phase response in delirium. *J Psychosom Res* 62(5):521-5.
- Diagnostic and statistical manual of mental disorders, Fifth Edition (DSM-5). 2013.
- Dillon ST, Vasunillashorn SM, Ngo L, Otu HH, Inouye SK, Jones RN, et al. 2017. Higher c-reactive protein levels predict postoperative delirium in older patients undergoing major elective surgery: a longitudinal nested case-control study. *Biol Psychiatry* 15:81(2):145-153.
- Egberts A, Mattace-Raso FU. 2017. Increased neutrophil-lymphocyte ratio in delirium: a pilot study. 2017. *Clinical Interventions in Aging* 12:1115-1121.
- Ely EW, Inouye AJ, Bernard GR, Gordon S, Francis J, May L, et al. 2001. Delirium in mechanically ventilated patients, validity and reliability of the confusion assessment method for the Intensive Care Unit (CAM-ICU). *JAMA* 286(21):2703-2710.
- Fernandez-Jimenez E, Munoz-Sanjose, Mediavilla R, Martinez-Ales G, Louzao II, Andreo J, et al. 2021. Prospective analysis between neutrophil-to-lymphocyte ratio on admission and development of delirium among older hospitalized

patients with COVID-19. *Front. Aging Neurosci* 13:764334.doi: 10.3389/fnagi.2021.764334.

Fernyhough P, Schmidt RE. 2002. Neurofilaments in diabetic neuropathy. *Int rev neurobiol* 50:115-144

Gabay C, Kushner I. 1999. Acute-phase proteins and other systemic responses to inflammation. *N Engl J Med* 340(6):448-454.

Gao Y, Duan J, Ji H, Lu W. 2021. Levels of S100 calcium binding protein B (S100B), neuron-specific enolase (NSE), and cycliphillin A (CypA) in the serum of patients with severe craniocerebral injury and multiple injuries combined with delirium transferred from the ICU and their prognostic value. *Ann Palliat Med* 10(3):3371-3378.

George J, Bleasdale S, Singleton SJ. 1997. Causes and prognosis of delirium in elderly patients admitted to a district general hospital. *Age and Aging* 26:423-427.

Gibb K, Seeley A, Quinn T, Siddiqi N, Shenki S, Rockwood K. 2020. The consistent burden in published estimates of delirium occurrence in medical inpatients over four decades: a systematic review and meta-analysis study. *Age and Ageing* 49:352-360.

Girard TD, Ware LB, Bernard GR, Pandharipande PP, Thompson JL, Shintani AK, et al. 2012. Associations of markers of inflammation and coagulation with delirium during critical illness. *Intensive Care Med* 38(12):1965-1973.

Goldstein ME, Sternberger NH, Sternberger LA. 1987. Phosphorylation protects neurofilament against proteolysis. *Journal of neuroimmunology* 14:149-160.

Gong J, Dong H, Xia QS, Huang ZY, Wang DK, Zhao Y, et al. 2020. Correlation analysis between disease severity and inflammation-related parameters in

patients with COVID-19: a retrospective study. *BMC Infectious Diseases* 20 (963):1-7.

Goyal A, Failla MD, Niyonkuru C, Amin K, Fabio A, Berger R, et al. 2013. S100b as a prognostic biomarker in outcome prediction for patients with severe traumatic brain injury. *J of Neurotrauma* 30:946-957.

Gudolf K, Vandervorst F, Gens R, Ourtani A, Scheinok T, De Raedt S. 2021. Neutrophil-to-lymphocyte ratio predicts delirium after stroke. *Age and Ageing* 50(5):1626-1632.

Hayakawa K, Okazaki R, Ishii K, Ueno T, Izawa N, Tanaka y, et al. 2012. Phosphorylated neurofilament subunit NF-H as a biomarker for evaluating the severity of spinal cord injury patients, a pilot study. *Spinal Cord* 50(7):493-496.

He R, Wang F, Shen H, Zeng Y and Zhang L. 2020. Association between increased neutrophil to – lymphocyte ratio and postoperative delirium in elderly patients with total hip arthroplasty for hip fracture. *BMC psychiatry* 20:496.

Herbinger KH, Hanus I, Schunk M, Beissner M, Sonnerburg FN, Loscher T, et al. 2016. Elevated values of C-reactive protein induced by imported infectious disease a controlled crosssectional study of 111,079 disease German travelers returning from the tropics and subtropics. *Journal American society of tropical medicine and hygiene* 95(4):938-944.

Hoogland IC, Houbolt C, van Westerloo DJ, van Gool WA, van de Beek D. 2015. Systemic inflammation and microglial activation: systemic review of animal experiments. *Journal of neuroinflammation* 12(114):1-13.

Hov KR, Bolstad N, Idland AV, Zetterberg H, Blennow K, Chaudhry FA, et al. 2017. *Dement Geriatr Cogn Disord Extra* 7:374-385.

- Hughes CG, Pandharipande PP, Thompson JL, Chandrasekhar R, Ware LB, Ely EW, et al. 2016. Endothelial activation and blood-brain barrier injury as risk factors for delirium in critically ill patients. *Crit Care Med* 44(9):e809-e817.
- Inoue R, Sumitani M, Ogata T, Chikuda H, Matsubara T, Kato S, et al. 2017. Direct evidence of central nervous system axonal damage in patients with postoperative delirium: A preliminary study of pNF-H as a promising serum biomarker. *Neuroscience Letters* 653:39-44.
- Inouye SK, Growdon M, Fong T. 2017. Delirium. Dalam: Halter JB, Ouslander JG, Studenski S, High KP, Asthana S, Ritchie CS, et al. *Hazzard's geriatric medicine and gerontology*, seventh edition. New York: McGraw Hill, pp 709-722.
- Inouye SK, van Dyck CH, Alessi CA, Balkin S, Siegel AP, Horwitz RI. 1990. Clarifying confusion: the confusion assessment method. A new method for detection of delirium. *Ann Intern Med* 113(12):941-948.
- Ji X, Sun C, LI X, Xing H, Zhao P, Jiang L. 2016. Baseline S100B protein as a potential predictor for postoperative cognitive dysfunction in elderly patients after hip joint replacement surgery. *Int Journal Clin Exp Pathol* 9(11):11911-11916.
- Khan BA, Farber MO, Campbell N, Perkins A, Prasad NK, Hui SL, et al. 2013. S100 calcium binding protein B as biomarker of delirium duration in the intensive care unit – an exploratory analysis. *International Journal of General Medicine* 6:855-861.
- Khan BA, Zawahiri M, Campbell NL, Boustani MA. 2011. Biomarkers for delirium-a review. *J Am Geriatr Soc* 59(02): S256-S261.

- Kiely DK, Marcantonio ER, Inouye SK, Shaffer ML, Shaffer ML, Bergmann MA, et al. 2009. Persistent delirium predicts increased mortality. *J Am Geriatr Soc* 57(1):55-61.
- Kleissner M, Sramko M, Kahoutek J, Kautzner J, Kettner J. 2021. Serum S100 Protein is a reliable predictor of brain injury after out-of-hospital cardiac arrest: a cohort study. *Front Cardiovasc Med* 8(624825):1-9.
- Knaak C, Vorderwülbecke G, Spies C, Piper SK, Hadzidiakos D, Borchers F, et al. 2019. C-reactive protein for risk prediction of post-operative delirium and postoperative neurocognitive disorder. *Acta Anaesthesiologica Scandinavica* 63(10):1282-1289.
- Koozi H, Lengquist M, Frigyesi A. 2019. C-reactive protein as prognostic factor in intensive care admissions for sepsis: a Swedish multicenter study. *J of Crit Care* 56:73-79.
- Kotfis K, Olejnik MB, Szylińska A, Retter I. 2019. Could neutrophil-to-lymphocyte ratio (NLR) serve as a potential marker for delirium prediction in patients with acute ischemic stroke? a prospective observational study. *Journal of clinical medicine* 8(1075):1-16.
- Kotfis K, Słozowska J, Safranow K, Szylińska A, Listewnik M. 2019. The practical use of white cell inflammatory biomarkers in prediction of postoperative delirium after cardiac surgery. *Brain Sci* 9 (308) 1-18.
- Kulaksizoglu B, Kulaksizoglu S. 2016. Relationship between neutrophil/lymphocyte ratio with oxidative stress and psychopathology in patients with schizophrenia. *Neuropsychiatric Disease and Treatment* 12:1999-2005.

- Kuswardhani T, Sugi Y. 2017. Factors related to the severity of delirium in the elderly patients with infection. *Gerontology and Geriatric Medicine* 3(2):233372141773918.
- Lee KH, Ha YC, Koo KH. 2011. Frequency, risk factors, and prognosis of prolonged delirium in elderly patients after hip fracture surgery. *Clin Orthop Relat Res* 469(9):2612-2620.
- Lenahan ME, Summers MJ, Saunders NL, Summers JJ. 2015. Relationship between education and age-related cognitive decline: a review of recent research. *Psychogeriatrics* 15:154-162.
- Liu Q, Xie F, Siedlak SL, Honda K, Moreira PI, Zhua X, et al. 2004. Neurofilament proteins in neurodegenerative disease. *Cellular and molecular life sciences* 61:3057-3075.
- Loy D, Sroufe A, Pelt J, Burke D, Cao Q, Talbott J, et al. 2005. Serum biomarkers for experimental acute spinal cord injury: rapid elevation of neuron-specific enolase and S-100beta. *Neurosurgery* 56: 391–397.
- Macdonald A, Martin FC, Treolar A. 2007. C-reactive protein levels predict the incidence of delirium and recovery from it. *Age and Ageing*; DOI: 10.1093/ageing/af1121
- MacLulich AM, Ferguson KJ, Miller T, de Rooij SE, Cunningham C. 2008. Unravelling the pathophysiology of delirium: a focus on the role of aberrant stress responses *J Psychosom Res* 65(3):229–238.
- Maldonado JR. 2013. Neuropathogenesis of delirium: review of current etiologic theories and common pathways. *Am J Geriatr Psychiatry* 21(12):1190-1213.
- Maldonado JR. 2017. Delirium pathophysiology: an updated hypothesis of the etiology of acute brain failure. *Int J Geriatr Psychiatry* DOI: 10.1002/gps.4823.



- Martins EC, Silveira L, Viegas K, Beck AD, Fioravanti G, Cremonese RV, et al. 2019. Neutrophil-lymphocyte ratio in the early diagnosis of sepsis in an intensive care unit: a case-control study. *Rev Bras Ter Intensive* 31(1):63-70.
- Matsuoka Y, Miyake Y, Arakaki H, Tanaka K, Saeki T, Yamawaki S. 2001. Clinical utility and validation of the Japanese version of memorial delirium assessment scale in psychogeriatric inpatient setting. *General Hospital Psychiatry* 23:36-40.
- McCombe PA, Pfluger C, Singh P, Lim CYH, Airey C, Henderson RD. 2015. Serial measurement of phosphorylated neurofilament-heavy in the serum of subjects with amyotrophic lateral sclerosis. *Journal of the Neurological Sciences* 353: 122-129.
- McGrane S, Girard TD, Thompson JL, Shintani AK, Woodworth A, Ely, EW, et al. 2011. Procalcitonin and C-reactive protein levels at admission as predictors of duration of acute brain dysfunction in critically ill patients. *Critical Care* 15: (R78):1-8.
- McNeil JB, Hughes CG, Girard T, Ware LB, Ely EW, Chandrasekhar R, et al. 2019. Plasma biomarkers of inflammation, coagulation, and brain injury as predictors of delirium duration in older hospitalized patients. *PLoS ONE* <https://doi.org/10.1371/journal.pone.0226412>:1-10.
- Michetti F, D'Ambrosi N, Toesca A, Puglisi MA, Serrano A, Marchese E, et al. 2019. The100B story: from biomarker to active factor in neural injury. *J Neurochem* 148:168-187.
- Mietani K, Sumitani M, Ogata T, Shimojo N, Inoue R, Abe H, et al. 2019. Dysfunction of the blood-brain barrier in postoperative delirium patients, referring to the axonal damage biomarker phosphorylated neurofilament heavy subunit. *PLoS ONE* 14(10):e0222721.

- Mohammed AM, Ahmed S, Mohammed SA. 2018. Neutrophil-to-lymphocyte ratio as a prognostic marker in critically-ill septic patients. *Research and Opinion in Anesthesia & Intensive Care* 5:279-286.
- Nakamura Y, Watanabe R, Katagiri M, Saida Y, Katada N, Watanabe M, et al. 2016. Neutrophil/lymphocyte ratio has a prognostic value for patients with terminal cancer. *World Journal of Surgical Oncology* 14(148):1-5.
- Nguyen DN, Huyghens L, Zhang H, Schiettecatte J, Smits J, Vincent JL. 2014. Cortisol is an associated-risk factor of brain dysfunction in patients with severe sepsis and septic shock. *BioMed Research International* Article ID 712742.
- Ni J, Wang H, Li Y, Shu Y, Liu Y. 2019. Neutrophil to lymphocyte ratio (NLR) as a prognostic marker for in-hospital mortality of patients with sepsis. *Medicine* 98(46):1-5.
- Nurdani A, Hadi U, Arfijanto MV, Rusli M, Bramantono, Miftahussurur M. 2019. Neutrophil-lymphocyte ratio and procalcitonin levels in sepsis patients. *The New Armenian Medical Journal* 13(1):48-54.
- Orfanu A, Arama V, Arama SS, Leustean A, Catana R, Negru A, et al. 2016. The diagnostic and prognostic role of neutrophil to lymphocyte count ratio in sepsis. *BMC Infect Dis* 16(4):31-76.
- Orfanu A, Popescu C, Tiliscan C, Streinu-Cercel A, Arama V, Arama SS. 2020. The usefulness of neutrophil/lymphocyte count ratio in the diagnosis and prognosis of bacterial sepsis – an old parameter with new implications. *Revista Romana de Medicina de Laborator* 28(1):39-48.
- Otani N, Morimoto Y, Kinoshita M, Ogata T, Mori K, Kobayashi M, et al. 2020. Serial changes in serum phosphorylated neurofilament and value for prediction of clinical outcome after traumatic brain injury. *Surg Neurol Int* 11:387.

doi: 10.25259/SNI\_696\_2020.

- Perkins BA, Orszag A, Ngo M, Eduardo, New P, Bril V. 2010. Prediction of incident diabetic neuropathy using the monofilament examination. *Diabetes journal* 33:7.
- Pfister D, Siegemund M, Dell-Kuster S, Smielewski P, Ruegg S, Strebel SP, et al. 2008. Cerebral perfusion in sepsis-associated delirium. *Critical Care* 12(3):1-9.
- Pieralli F, Vannucchi V, Mancini A, Grazzini M, Paolacci G, Morettini A, et al. 2014. Delirium is a predictor of in-hospital mortality in elderly patients with community acquired pneumonia. *Intern Emerg Med* 9(2):195-200.
- Pisani MA, Kong YJ, Kasl SV, Murphy TE, Araujo KL, Van Ness PH. 2009. Days of delirium are associated with 1-year mortality in an older intensive care unit population. *Am J Respir Crit Care Med* 180:1092-1097.
- Poesen K and Damme PV. 2019. Diagnostic and prognostic performance of neurofilaments in ALS. *Frontiers in neurology* 9(1167):1-7.
- Puzianowska-Kuznicka M, Owczarż M, Wieczorowska-Tobis K, Nadrowski P, Chudek J, Slusarczyk P, et al. 2016. Interleukin-6 and c-reactive protein, successful aging, and mortality: the PolSenior study. *Immun Ageing* 13(21):1-12.
- Qiao X, Zhang S, Zhao W, Hongying Ye, Yang Y, Zhang Z, et al. 2015. Serum phosphorylated neurofilament- heavy chain, a potential biomarker, is associated with peripheral neuropathy in patients with type 2 diabetes. *Medicine* 94(44):e1908:1-6.
- Raju K, Coombe-Jones. An overview of delirium for the community and hospital clinician. 2015. *Progress in Neurology and Psychiatry* November/December:23-27.

- Ren Q, Wang F, Shen H, Zeng Y and Zhang L. 2020. Elevated level of serum C-reactive protein predicts postoperative delirium among patients receiving cervical or lumbar surgery. *Hindawi Biomed research international* article ID 5480148:1-8.
- Riche F, Gayat E, Barthelemy R, Le Dorze M, Mateo J, Payen D. 2015. Reversal of neutrophil-to-lymphocyte count ratio in early versus late death from septic shock. *Crit Care* 19(439):1-10.
- Rundgren M, Friberg H, Cronberg T, Romner B and Petzold A. 2012. Serial soluble neurofilament heavy chain in plasma as a marker of brain injury after cardiac arrest. *Critical care* 16(R45):1-7.
- Ryoo SM, Han KS, Ahn S, Shin TG, Hwang SY, Chung SP, et al. 2019. The usefulness of C-reactive protein and procalcitonin to predict prognosis in septic shock patients: a multicenter prospective registry-based observational study. *Scientific Reports* 9(6579):1-7.
- Saliccioli JD, Marshall DC, Pimentel MA, Santos MD, Pollard T, Celi LA, et al. 2015. The association between the neutrophil-to-lymphocyte ratio and mortality in critical illness: an observational cohort study. *Crit Care* 19:13. DOI: 10.1186/s13054-014-0731-6.
- Sastroasmoro S, Ismael S. 2011. *Dasar-dasar metodologi penelitian klinis*. Jakarta: Sagung Seto, pp 348-382.
- Sellner J, Patel A, Dassan P, Brown MM, Petzold A. 2011. Hyperacute detection of neurofilament heavy chain in serum following stroke: a transient sign. *Neurochem Res* 36:2287-2291.

- Setiati S, Harimurti K, Govinda R. 2014. Prose menua dan implikasi kliniknya. Dalam: Setiati S, Alwi I, Sudoyo AW, Simadibrata M, Setiyohadi B, Syam AF. Buku ajar ilmu penyakit dalam. Jakarta: Interna Publishing, pp 3669-3679.
- Sharifpour M, Rangaraju S, Liu M, Alabyad D, Nahab FB, Creel-Bulos CM, et al. 2020. C-reactive protein as a prognostic indicator in hospitalized patients with COVID-19. Plos One. <https://doi.org/10.1371/journal.pone.0242400>.
- Sharshar T, Carlier R, Bernard F, Guidoux C, Brouland JP, et al. 2007. Brain lesions in septic shock: a magnetic resonance imaging study. Intensive Care Medicine 33(5):798–806.
- Shaw G, Yang C, Ellis R, Ardenon K, Parker Mickle J, Scheff S et al. 2005. Hyperphosphorylated neurofilament NF-H is a serum biomarker of axonal injury. Biochem Biophys Res Commun 336:1268-1277.
- Shi Z, Wu Y, Li C, Fu S, Li G, Zhu Y, et al. 2014. Using the Chinese version of memorial delirium assessment scale to describe postoperative delirium after hip surgery. Frontiers in Aging Neuroscience 6(297):1-6.
- Shrivastava AK, Singh HV, Raizada A, Singh SK. 2015. C-reactive protein, inflammation and coronary heart disease. The Egyptian Heart Journal 67:89-97.
- Siddiqi N, House AO, Holmes JD. 2006. Occurrence and outcome of delirium in medical in-patients: a systematic literature review. Age and Aging 35:350-364.
- Simone MJ, Tan ZS. 2011. The role of inflammation in the pathogenesis of delirium and dementia in older adults: a review. CNS Neuroscience & Therapeutics 17:506-5013.
- Soejono CH. 2014. Sindrom delirium (acute confusional state). Dalam: Setiati S, Alwi I, Sudoyo AW, Simadibrata M, Setiyohadi B, Syam AF. Buku ajar ilmu penyakit dalam. Jakarta: InternaPublishing, pp 3795-3800.

- Stoicea N, McVicker S, Quinones A, Agbenyefia P, Bergese SD. 2014. Delirium-biomarkers and genetic variance. *Frontiers in Pharmacology* 5(75):1-3.
- Sugi YS. 2016. Peningkatan kadar S100B dan kadar interleukin-6 serum berkorelasi dengan tingkat keparahan delirium pada pasien geriatri yang dirawat di RSUP Sanglah. Tesis.
- Szewieczek J, Francuz T, Dulawa J, Legierska K, Hornik B, Wlodarczyk I, et al. 2015. Functional measures, inflammatory markers and endothelin-1 as predictors of 360-day survival in centenarians. *Age* 37(85):1-12.
- Terradas R, Grau S, Blanch J, Riu M, Saballs P, Castells X, et al. 2012. Eosinophil count and neutrophil-lymphocyte count ratio as prognostic markers in patients with bacteremia: a retrospective cohort study. *PLoS One* 7(8):e42860. DOI: 10.1371/journal.pone.0042860.
- Thelin EP, Nelson DW, Bellander BM. 2017. A review of the clinical utility of serum S100B protein levels in the assessment of traumatic brain injury. *Acta Neurochirurgica (Wien)* 159:209–225. [https://doi.org/ 10.1007/s00701-016-3046-3](https://doi.org/10.1007/s00701-016-3046-3) PMID: 27957604 1
- Toft K, Tontsch J, Abdelhamid S, Steiner L, Siegemund M, Hollinger A. 2019. Serum biomarkers of delirium in the elderly: a narrative review. *Ann. Intensive Care* 9(76):1-19.
- Townend W, Dibble C, Abid K, Vail A, Sherwood R, Lecky F. 2006. Rapid elimination of protein S-100B from serum after minor head trauma. *J Neurotrauma* 23(2):149-155.
- Trial J, Potempa LA, Entman ML. 2016. The role of C-reactive protein in innate and acquired inflammation: new perspectives. *Inflamm Cell Signal* 3(2):1-9.

- Tsuruta R, Oda Y. 2016. A clinical perspective of sepsis-associated delirium. *Journal of Intensive Care* 4(18):1-7.
- Uchikado H, Akiyama H, Kondo H, Ikeda K, Tsuchiya K, Kato M, et al. 2004. *Acta Neuropathol* 107(4):341-351.
- Ueno T, Ohori Y, Ito J, Hoshikawa S, Yamamoto S, Nakamura K, et al. 2011. Hyperphosphorylated neurofilament NF-H as a biomarker of the efficacy of minocycline therapy for spinal cord injury. *Spinal Cord* 49:333-336.
- Van den Boogard M, Kox M, Quinn KL, van Achterberg T, van der Hoeven JG, Schoonhoven L, et al. 2011. Biomarkers associated with delirium in critically ill patients and their relation with long-term subjective cognitive dysfunction; indications for different pathways governing delirium in inflamed and noninflamed patients. *Critical Care* 15:R297. doi: 10.1186/cc10598.
- Van Munster BC, Korevaar JC, Korse CM, Bonfrer JM, Zwinderman AH, de Rooij SE. 2010. Serum S100B in elderly patients with and without delirium. *Int J Geriatr Psychiatry* 25(3):234-239.
- Van Munster BC, Korse CM, de Rooij SE, Bonfrer JM, Zwinderman AH, Korevaar JC. 2009. Markers of cerebral damage during delirium in elderly patients with hip fracture. *BMC Neurology* 9(21):1-7.
- Vasunilashorn SM, Dillon ST, Inouye SK, Ngo LH, Fong TG, Jones RN. 2017. High C-reactive protein predicts delirium incidence, duration, and feature severity after major non-cardiac surgery. *J Am Geriatr Soc* 65(8):e109-e116.
- White S, Bayer A, O'Mahony M. 2008. Delirium and C-reactive protein. *Age and Ageing*. DOI: 10.1093/ageing/afm178.
- Wilson C, Finch C, Cohen C. 2002. Cytokines and cognition – the case for a head to toe inflammatory paradigm. *J Am Geriatr Soc* 50:2041-2056.

- Xiang D, Xing H, Tai H, Xie G. 2017. Preoperative C-reactive protein as a risk factor for postoperative delirium in elderly patients undergoing laparoscopic surgery for colon carcinoma. *Biomed Research International*. <https://doi.org/10.1155/2017/5635640>.
- Yang AP, Liu JP, Tao WQ, Li HM. 2020. The diagnostic and predictive role of NLR, d-NLR and PLR in COVID-19 patients. *Int Immunopharmacol* 84:106504 doi: 10.1016/j.intimp.2020.106504.
- Yucel D. 2014. C-reactive protein vs. high-sensitivity C-reactive protein: what is the difference? *Turk J Biochem* 39(1):43-44.
- Zahorec R. 2001. Ratio of neutrophil to lymphocyte counts – rapid and simple parameter of systemic inflammation and stress in critically ill. *Bratisl Lek Listy* 102(1):5-14.
- Zhang H, Wang X, Zhang Q, Xia Y, Liu D. 2017. Comparison of procalcitonin and high-sensitivity C- reactive protein for the diagnosis of sepsis and septic shock in the oldest old patients. *BMC Geriatrics* 17(173):1-6.
- Zhao Y, Yue J, Lei P, Lin T, Peng X, Xie D, et al. 2021. Neutrophil-lymphocyte ratio as a predictor of delirium in older internal medicine patients: a prospective cohort study. *BMC Geriatrics* 21(334):1-9.
- Zurek J, Fedora M. 2012. The usefulness of S100B, NSE, GFAP, NF-H, secretagoin and Hsp70 as a predictive biomarker of outcome in children with traumatic brain injury. *Acta Neurochir* 154:93-103.