

DAFTAR PUSTAKA

- Abdel-Ghaffar, W.E., Soha Magdy Ahmed, El, M., Amr Elfatraty, Elmesky, M. & Doaa Hashad., 2019. The role of s100b as a predictor of the functional outcome in geriatric patients with acute cerebrovascular stroke. *The Egyptian Journal of Neurology, Psychiatry and Neurosurgery*. 55(1).
- Ahmed, R., Mhina, C., Philip, K., Patel, S.D., Aneni, E., Osondu, C., Otite, F.O., 2023. Age- and Sex-Specific Trends in Medical Complications After Acute Ischemic Stroke in the United States. *Neurology*. 100(12):e1282–e1295.
- Andone, S., Bajko, Z., Motataianu, A., Mosora, O. & Balasa, R., 2021. The Role of Biomarkers in Atherothrombotic Stroke—A Systematic Review. *International Journal of Molecular Sciences*. 22(16):9032.
- Ansari, J. & Gavins, F.N.E., 2021. The impact of thrombo-inflammation on the cerebral microcirculation. *Microcirculation*. 28(3).
- Appelros, P., Nydevik, I. & Viitanen, M., 2003. Poor Outcome After First-Ever Stroke. *Stroke*. 34(1):122–126.
- Aref, H.M.A., Fahmy, N.A., Khalil, S.H., Ahmed, M.F., ElSadek, A. & Abdulghani, M.O., 2020. Role of interleukin-6 in ischemic stroke outcome. *The Egyptian Journal of Neurology, Psychiatry and Neurosurgery*. 56(1).
- Banks, J.L. & Marotta, C.A., 2007. Outcomes Validity and Reliability of the Modified Rankin Scale: Implications for Stroke Clinical Trials. *Stroke*. 38(3):1091–1096.
- Bhole, R., Nouer, S.S., Tolley, E.A., Turk, A., Siddiqui, A.H., Alexandrov, A.V., COMPASS investigators., 2022. Predictors of early neurologic deterioration (END) following stroke thrombectomy. *Journal of Neurointerventional Surgery*. (May, 18):neurintsurg–2022-018844.
- Bhole, R., Nouer, S.S., Tolley, E.A., Turk, A., Siddiqui, A.H., Alexandrov, A.V., COMPASS investigators, 2019. Predictors of early neurologic deterioration (END) following stroke thrombectomy. *Journal of Neurointerventional Surgery*. (May, 18):neurintsurg–2022-018844.
- Bielewicz, J., Kurzepa, J., Daniluk, B. *et al.*, 2016. Worse Neurological State During Acute Ischemic Stroke is Associated with a Decrease in Serum Albumin Levels. *J. Mol. Neurosci*. 58, 493–496.
- Biessels, G.J., van der Heide, L.P., Kamal, A., Bleys, R.L.A.W. & Gispen, W.H. 2002. Ageing and diabetes: implications for brain function. *European Journal of Pharmacology*. 441(1-2):1–14.
- Bill, O., Zufferey, P., Faouz, M. *et al.*, 2012. Severe Stroke: Patient Profile and Predictors of Favorable Outcome. *International Society on Thrombosis and Haemostasis. Journal of Thrombosis and Haemostasis*.
- Boehme, A.K., Esenwa, C. & Elkind, M.S.V., 2017. Stroke Risk Factors, Genetics, and Prevention. *Circulation research*. 120(3):472–495.
- Boehme, A.K., Ranawat, P., Luna, J., Kamel, H. & Elkind, M.S.V., 2017. Risk of Acute Stroke After Hospitalization for Sepsis. *Stroke*. 48(3):574–580.

- Capes, S.E., Hunt, D., Malmberg, K., Pathak, P. & Gerstein, H.C., 2001. Stress Hyperglycemia and Prognosis of Stroke in Nondiabetic and Diabetic Patients. *Stroke*. 32(10):2426–2432.
- Che, F., Wang, A., Ju, Y., Ding, Y., Duan, H., Geng, X., Wang, Y., 2022. Early neurological deterioration in acute ischemic stroke patients after intravenous thrombolysis with alteplase predicts poor 3-month functional prognosis - data from the Thrombolysis Implementation and Monitor of Acute Ischemic Stroke in China (TIMS-China). *BMC neurology*. 22(1):212.
- Chen, X., Liu, Z., Miao, J., Zheng, W., Yang, Q., Ye, X., Peng, F., 2019. High Stress Hyperglycemia Ratio Predicts Poor Outcome after Mechanical Thrombectomy for Ischemic Stroke. *Journal of Stroke and Cerebrovascular Diseases*. 28(6):1668–1673.
- Cheng, L.-S., Tu, W.-J., Shen, Y., Zhang, L.-J. & Ji, K., 2017. Combination of High-Sensitivity C-Reactive Protein and Homocysteine Predicts the Post-Stroke Depression in Patients with Ischemic Stroke. *Molecular Neurobiology*. 55(4):2952–2958.
- Choi, K.-H., Park, M.-S., Kim, J.-T., Chang, J., Nam, T.-S., Choi, S.-M., Cho, K.-H., 2012. Serum triglyceride level is an important predictor of early prognosis in patients with acute ischemic stroke. *Journal of the Neurological Sciences*. 319(1-2):111–116.
- Cochrane UK, 2019. *Sensitivity and specificity explained: A Cochrane UK Trainees blog*. *Cochrane.org*. <https://uk.cochrane.org/news/sensitivity-and-specificity-explained-cochrane-uk-trainees-blog>.
- Corrales-Medina, V.F., Alvarez, K.N., Weissfeld, L.A., Angus, D.C., Chirinos, J.A., Chang, C.-C.H., Yende, S., 2015. Association Between Hospitalization for Pneumonia and Subsequent Risk of Cardiovascular Disease. *JAMA*. 313(3):264.
- Corso, G., Bottacchi, E., Tosi, P., Caligiana, L., Lia, C., Veronese Morosini, M., *et al.*, 2014. Outcome Predictors in First-Ever Ischemic Stroke Patients: A Population-Based Study. *International Scholarly Research Notices*. 2014:1–8.
- Cuadrado-Godia, E., 2015. Early neurological deterioration, easy methods to detect it. *The Indian Journal of Medical Research*. 141(3):266–268. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4442322/>.
- Cuadrado-Godia, E., 2015. Early neurological deterioration, easy methods to detect it. *The Indian Journal of Medical Research*. 141(3):266–268. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4442322/>.
- Daniele, G., Guardado Mendoza, R., Winnier, D., Fiorentino, T.V., Pengou, Z., Cornell, J., Folli, F., 2013. The inflammatory status score including IL-6, TNF- α , osteopontin, fractalkine, MCP-1 and adiponectin underlies whole-body insulin resistance and hyperglycemia in type 2 diabetes mellitus. *Acta Diabetologica*. 51(1):123–131.
- Dávalos A., Toni, D., Iweins, F., Lesaffre, E., Bastianello, S. & Castillo, J., 1999. Neurological Deterioration in Acute Ischemic Stroke. *Stroke*. 30(12):2631–2636.

- Denny, M.C., Ramadan, A.R., Savits, S.I. & Grotta, J., 2019. Neurological Deterioration in Acute Ischemic Stroke. *Cambridge University Press eBooks*. (November, 7):101–118.
- Dewiyana, Setyopranoto, I., Paryono, 2015. Peningkatan Skor Indeks Barthel Sebagai Acuan Pemulangan Pasien Stroke Iskemik Dari Rumah Sakit. *Tesis*. Program Pasca Sarjana Universitas Gadjah Mada.
- Dziedzic, T., Slowik, A., Gryz, E.A. & Szczudlik, A., 2004. Lower Serum Triglyceride Level Is Associated With Increased Stroke Severity. *Stroke*. 35(6).
- El-Belkimy, M., Elkhayat, N., ElSadek, A., Mansour, A.H. & Aboutaleb, M., 2019. Predictive value of C-reactive protein and carotid intimal medial thickness in acute ischemic stroke. *The Egyptian Journal of Neurology, Psychiatry and Neurosurgery*. 55(1).
- Elkind, M.S.V., Boehme, A.K., Smith, C.J., Meisel, A. & Buckwalter, M.S., 2020. Infection as a Stroke Risk Factor and Determinant of Outcome After Stroke. *Stroke*. 51(10):3156–3168.
- Elkind, M.S.V., Cheng, J., Rundek, T., Boden-Albala, B. & Sacco, R.L., 2004. Leukocyte count predicts outcome after ischemic stroke: The Northern Manhattan Stroke Study. *Journal of Stroke and Cerebrovascular Diseases*. 13(5):220–227.
- Esmael, A., Elsherief, M. & Eltoukhy, K., 2021. Predictive Value of the Alberta Stroke Program Early CT Score (ASPECTS) in the Outcome of the Acute Ischemic Stroke and Its Correlation with Stroke Subtypes, NIHSS, and Cognitive Impairment. *Stroke Research and Treatment*. 2021:1–10.
- Esposito, K., Nappo, F., Marfella, R., Giugliano, G., Giugliano, F., Ciotola, M., Giugliano, D., 2002. Inflammatory Cytokine Concentrations Are Acutely Increased by Hyperglycemia in Humans. *Circulation*. 106(16):2067–2072.
- Fann, W.D.Y., Lee, S.Y., Manzanero, S *et al.*, 2013. Pathogenesis of acute stroke and the role of inflammasomes. *Ageing Research Reviews*;12:941–966.
- Feigin, V.L., Stark, B.A., Johnson, C.O., Roth, G.A., Bisignano, C., Abady, G.G., Ahmed Salih, Y., 2021. Global, regional, and national burden of stroke and its risk factors, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet Neurology*. 20(10):795–820.
- Florkowski, C., 2013. HbA1c as a Diagnostic Test for Diabetes Mellitus - Reviewing the Evidence. *The Clinical biochemist. Reviews*. 34(2):75–83. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3799221/>.
- Fofi, L., Dall'Armi, V., Durastanti, L., *et al.*, 2012. An observational study on electrolyte disorders in the acute phase of ischemic stroke and their prognostic value. *Journal of Clinical Neuroscience*, 19(4), 513–516.doi:10.1016/j.jocn.2011.07.041
- Fuentes, B., Castillo J., San José B., Leira, R., Serena J., Vivancos J., Díez-Tejedor, E., 2009. The Prognostic Value of Capillary Glucose Levels in Acute Stroke. *Stroke*. 40(2):562–568.

- Furlan, J.C., Vergouwen, M.D.I., Fang, J. & Silver, F.L., 2014. White blood cell count is an independent predictor of outcomes after acute ischaemic stroke. *European Journal of Neurology*. 21(2):215–222.
- Gąsecki, D., Kwarciany, M., Kowalczyk, K., Narkiewicz, K. & Karaszewski, B. 2020. Blood Pressure Management in Acute Ischemic Stroke. *Current Hypertension Reports*. 23(1).
- Gattringer, T., Posekany, A., Niederkorn, K., Knoflach, M., Poltrum, B., Mutzenbach, S., Fazekas, F., 2019. Predicting Early Mortality of Acute Ischemic Stroke. *Stroke*. 50(2):349–356.
- Gattringer, T., Posekany, A., Niederkorn, K., Knoflach, M., Poltrum, B., Mutzenbach, S., Fazekas, F., 2019. Predicting Early Mortality of Acute Ischemic Stroke. *Stroke*. 50(2):349–356.
- Geng, H.-H., Wang, X.-W., Fu, R.-L., Jing, M.-J., Huang, L.-L., Zhang, Q., Wang, P.-X., 2016. The Relationship between C-Reactive Protein Level and Discharge Outcome in Patients with Acute Ischemic Stroke. *International Journal of Environmental Research and Public Health*. 13(7):636.
- Gerdes, N., Sukhova, G.K., Libby, P., Reynolds, R.S., Young, J.L. & Schönbeck, U., 2002. Expression of Interleukin (IL)-18 and Functional IL-18 Receptor on Human Vascular Endothelial Cells, Smooth Muscle Cells, and Macrophages. *Journal of Experimental Medicine*. 195(2):245–257.
- Girijala, R.L., Sohrabji, F., Bush, R.L., 2016. Sex Difference in Stroke : Review of Current Knowledge and Evidence. *Vasc. Med. J.* 1-10.
- Gofir, A., Mulyono, B. & Sutarni, S., 2017. Hyperglycemia as a prognosis predictor of length of stay and functional outcomes in patients with acute ischemic stroke. *International Journal of Neuroscience*. 127(10):923–929.
- Gowda SN, De Jesus O., 2021. Brainstem Infarction. *Treasure Island (FL): StatPearls Publishing*; 2021 Jan–. PMID: 32809731.
- Grotta, J.C., Albers, G.W., Broderick, J.P., *et al.*, 2016. *Stroke – Pathophysiology, Diagnosis, and Management*. Elsevier.
- Han, L., Hou, Z., Ma, M., Ding, D., Wang, D. & Fang, Q., 2023. Impact of glycosylated hemoglobin on early neurological deterioration in acute mild ischemic stroke patients treated with intravenous thrombolysis. *Frontiers in Aging Neuroscience*. 14.
- Harris, S., Rasyid, A., Kurniawan, M., Mesiano, T. & Hidayat, R., 2019. Association of High Blood Homocysteine and Risk of Increased Severity of Ischemic Stroke Events. *The International Journal of Angiology : Official Publication of the International College of Angiology, Inc.* 28(1):34–38.
- Heitsch, L., Ibanez, L., Carrera, C., Binkley, M.M., Strbian, D., Tatlisumak, T., Sobrino, T., 2021. Early Neurological Change After Ischemic Stroke Is Associated With 90-Day Outcome. *Stroke*. 52(1):132–141.
- Hertz, L. 2008. Bioenergetics of cerebral ischemia: A cellular perspective. *Neuropharmacology*. 55(3):289–309.

- Holmen, M., Hvas, A.-M. & Arendt, J.F.H., 2021. Hyperhomocysteinemia and Ischemic Stroke: A Potential Dose-Response Association—A Systematic Review and Meta-analysis. *TH Open*. 05(03):e420–e437.
- Huang, Y.-W., Yin, X.-S. & Li, Z.-P., 2022. Association of the stress hyperglycemia ratio and clinical outcomes in patients with stroke: A systematic review and meta-analysis. *Frontiers in Neurology*. 13.
- Iidicula, T.T., Brogger, J., Naess, H., Waje-Andreassen, U. & Thomassen, L., 2009. Admission C – reactive protein after acute ischemic stroke is associated with stroke severity and mortality: The “Bergen stroke study”. *BMC Neurology*. 9(1).
- Jadavji, N., Yahn, G. & Abato, J., 2021. Role of vitamin B12 deficiency in ischemic stroke risk and outcome. *Neural Regeneration Research*. 16(3):470.
- Jia Q, Zhao X, Wang C, *et al.* 2011. Diabetes and Poor Outcomes Within 6 Months After Acute Ischemic Stroke – The China National Stroke Registry. *Stroke AHA Jour*. 42:2758-62.
- Johnson, C.O., Nguyen, M., Roth, G.A., Nichols, E., Alam, T., Abate, D., Alvis-Guzman, N., 2019. Global, regional, and national burden of stroke, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet Neurology*. 18(5):439–458.
- Justicia, C., Salas-Perdomo, A., Pérez-de-Puig, I., Deddens, L.H., van Tilborg, G.A.F., Castellví, C., Planas, A.M., 2017. Uric Acid Is Protective After Cerebral Ischemia/Reperfusion in Hyperglycemic Mice. *Translational Stroke Research*. 8(3):294–305.
- Kado, S., Nagase, T. & Nagata, N., 1999. Circulating levels of interleukin-6, its soluble receptor and interleukin-6/interleukin-6 receptor complexes in patients with type 2 diabetes mellitus. *Acta Diabetologica*. 36(1-2):67–72.
- Kang Law, Z., Dineen, R., England, T., Cala, L., Amit, amp;, Mistri, K., Sprigg, N., 2020. *Predictors and Outcomes of Neurological Deterioration in Intracerebral Hemorrhage: Results from the TICH-2 Randomized Controlled Trial*. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7925446/pdf/12975_2020_Article_845.pdf Date of access: 27 Aug. 2023.
- Khan, T., Ikram, A., Saeed, O., Afridi, T., Sila, C.A., Irshad, K., *et al.*, 2017. Deep Vein Thrombosis in Acute Stroke - A Systemic Review of the Literature. *Cureus*. 9(12).
- Kim, H.-G., 2019. Cognitive dysfunctions in individuals with diabetes mellitus. *Yeungnam University Journal of Medicine*. 36(3):183–191.
- Kim, Y.S., Kim, B.J., Yoo, J., Han, J.H., Kim, B.J., Kim, C.K., Bae, H.-J., 2023. Abstract WP50: Stress Hyperglycemia And Early Neurological Deterioration In Patients With Acute LVO And Low NIHSS. *Stroke*. 54(Suppl_1).
- Kim, Y.S., Kim, B.J., Yoo, J., Han, J.H., Kim, B.J., Kim, C.K., Bae, H.-J., 2023. Abstract WP50: Stress Hyperglycemia And Early Neurological Deterioration In Patients With Acute LVO And Low NIHSS. *Stroke*. 54(Suppl_1).

- Kitada, M., Zhang, Z., Mima, A. & King, G.L., 2010. Molecular mechanisms of diabetic vascular complications. *Journal of Diabetes Investigation*. 1(3):77–89.
- Kitada, M., Zhang, Z., Mima, A. & King, G.L., 2010. Molecular mechanisms of diabetic vascular complications. *Journal of Diabetes Investigation*. 1(3):77–89.
- Klein, J.P. & Waxman, S.G., 2003. The brain in diabetes: molecular changes in neurons and their implications for end-organ damage. *The Lancet. Neurology*. 2(9):548–554.
- Kumar, A.D., Boehme, A.K., Siegler, J.E., Gillette, M., Albright, K.C. & Martin-Schild, S., 2013. Leukocytosis in Patients with Neurologic Deterioration after Acute Ischemic Stroke is Associated with Poor Outcomes. *Journal of Stroke and Cerebrovascular Diseases*. 22(7):e111–e117.
- Lanas, F. & Seron, P., 2021. Facing the stroke burden worldwide. *The Lancet Global Health*. (January).
- Leasure, A.C., Kuohn, L.R., Vanent, K.N., Bevers, M.B., Kimberly, W.T., Steiner, T., Sheth, K.N., 2021. Association of Serum IL-6 (Interleukin 6) With Functional Outcome After Intracerebral Hemorrhage. *Stroke*. 52(5):1733–1740.
- Lee, T.F., Burt, M.G., Heilbronn, L.K., Mangoni, A.A., Wong, V.W., McLean, M., *et al.*, 2017. Relative hyperglycemia is associated with complications following an acute myocardial infarction: a post-hoc analysis of HI-5 data. *Cardiovascular Diabetology*. 16:157.
- Li, J., Wang, D., Tao, W., Dong, W., Zhang, J., Yang, J., *et al.*, 2016. Early consciousness disorder in acute ischemic stroke: incidence, risk factors and outcome. *BMC Neurology*. 16(1).
- Li, Q., Liu, Q.-J., Yang, W.-S., Wang, X.-C., Zhao, L.-B., Xiong, X., Xie, P., 2017. Island Sign: An Imaging Predictor for Early Hematoma Expansion and Poor Outcome in Patients With Intracerebral Hemorrhage. *Stroke*. 48(11):3019–3025.
- Li, Q., Zhang, G., Huang, Y.-J., Dong, M.-X., Lv, F.-J., Wei, X., Xie, P., 2015. Blend Sign on Computed Tomography: Novel and Reliable Predictor for Early Hematoma Growth in Patients With Intracerebral Hemorrhage. *Stroke*. 46(8):2119–2123.
- Li, Y., Cao, L.-L., Liu, L. & Qi, Q.-D., 2017. Serum levels of homocysteine at admission are associated with post-stroke depression in acute ischemic stroke. *Neurological Sciences*. 38(5):811–817.
- Li, Y., Ouyang, Q., Li, J., Chen, X., Li, L., Xu, L., *et al.*, 2019. Correlation between matrix metalloproteinase-2 polymorphisms and first and recurrent atherosclerotic ischemic stroke events: a case–control study. *Journal of International Medical Research*. 49(6):030006052110229.
- Liang, H., Zhang, Q., Hu, Y., Liu, G. & Qi, R., 2022. Hypertriglyceridemia: A Neglected Risk Factor for Ischemic Stroke? *Journal of Stroke*. 24(1):21–40.

- Lien, C.-F., Chen, S.-J., Tsai, M.-C. & Lin, C.-S., 2021. Potential Role of Protein Kinase C in the Pathophysiology of Diabetes-Associated Atherosclerosis. *Frontiers in Pharmacology*. 12:716332.
- Lin, H.J., Wolf, P.A., Kelly-Hayes, M., Beiser, A.S., Kase, C.S., Benjamin, E.J., *et al.*, 1996. Stroke severity in atrial fibrillation. The Framingham Study. *Stroke*. 27(10):1760–1764.
- Liu, B., Chen, Y., Yu, L. & Zhou, M., 2023. Stress hyperglycemia ratio is associated with systemic inflammation and clinical outcomes in diabetic inpatients with pneumonia on admission. *Journal of Diabetes*. (May, 5).
- Liu, C.H., Lin, S, Lin, J., 2014. Dehydration is An Independent Predictor of Discharge Outcome And Admission Cost In Acute Ischaemic Stroke. *European Journal of Neurology*, 21(9), pp 1184-1191.
- Liu, P., Liu, S., Feng, N., Wang, Y., Gao, Y. & Wu, J., 2020. Association between neurological deterioration and outcomes in patients with stroke. *Annals of Translational Medicine*. 8(1):4–4.
- Liu, P., Liu, S., Feng, N., Wang, Y., Gao, Y. & Wu, J., 2020. Association between neurological deterioration and outcomes in patients with stroke. *Annals of Translational Medicine*. 8(1):4–4.
- Lord, A.S., Gilmore, E., Choi, H.A. & Mayer, S.A., 2015. Time Course and Predictors of Neurological Deterioration after Intracerebral Hemorrhage. *Stroke; a journal of cerebral circulation*. 46(3):647–652.
- Luo, Y., Wang, X., Matsushita, K., *et al.*, 2014. Associations Between Estimated Glomerular Filtration Rate and Stroke Outcomes in Diabetic Versus Nondiabetic Patients. *Stroke*, 45(10), 2887–2893.doi:10.1161/strokeaha.114.005380
- Lv, Y., Sun, Q., Li, J., Zhang, W., He, Y. & Zhou, Y., 2021. Disability Status and Its Influencing Factors Among Stroke Patients in Northeast China: A 3-Year Follow-Up Study. *Neuropsychiatric Disease and Treatment*. Volume 17:2567–2573.
- M, B., 2005. *The Pathobiology of Diabetic Complications: A Unifying Mechanism*. *Diabetes*. <https://pubmed.ncbi.nlm.nih.gov/15919781/>.
- Ma, Y., Liu, L., Pu, Y., Zou, X., Pan, Y., Soo, Y., Wang, Y., 2015. Predictors of neurological deterioration during hospitalization: results from the Chinese Intracranial Atherosclerosis (CICAS) Study. *Neurological Research*. 37(5):385–390.
- Mallat, Z., Corbaz, A., Scoazec, A., Besnard, S., Lesèche, G., Chvatchko, Y., *et al.*, 2001. Expression of interleukin-18 in human atherosclerotic plaques and relation to plaque instability. *Circulation*. 104(14):1598–1603.
- Mandrekar, J.N., 2010. Receiver Operating Characteristic Curve in Diagnostic Test Assessment. *Journal of Thoracic Oncology*. 5(9):1315–1316.
- Manso, H., Krug, T., Sobral, J., Albergaria, I., Gaspar, G., Ferro, J.M., Vicente, A.M., 2010. Variants of the Matrix Metalloproteinase-2 but not the Matrix Metalloproteinase-9 genes significantly influence functional outcome after stroke. *BMC medical genetics*. 11:40.
- Mansour, O.Y., Megahed, M.M. & Abd Elghany, E.H.S., 2015. Acute ischemic stroke prognostication, comparison between Glasgow Coma Score,

- NIHS Scale and Full Outline of UnResponsiveness Score in intensive care unit. *Alexandria Journal of Medicine*. 51(3):247–253.
- Martin, A.J., Dale, N., Imray, C.H.E., Roffe, C., Smith, C.J., Tian, F., *et al.*, 2019. The association between early neurological deterioration and whole blood purine concentration during acute stroke. *Biomarker Research*. 7(1).
- Martin, E.T., Kaye, K.S., Knott, C., Nguyen, H., Santarossa, M., Evans, R., Jaber, L., 2015. Diabetes and Risk of Surgical Site Infection: A Systematic Review and Meta-analysis. *Infection Control & Hospital Epidemiology*. 37(1):88–99.
- Maskey, A., Parajuli, M. & Kohli, S.C., 2012. A Study of Risk Factors of Stroke in Patients Admitted in Manipal Teaching Hospital, Pokhara. *Kathmandu University Medical Journal*. 9(4):244–247.
- Matsuo, R., Ago, T., Kamouchi, M., Kuroda, J., Kuwashiro, T., Hata, J., Kitazono, T., 2013. Clinical significance of plasma VEGF value in ischemic stroke - research for biomarkers in ischemic stroke (REBIOS) study. *BMC Neurology*. 13(1).
- McCabe, J., O'Reilly, E., Coveney, S., Collins, R., Healy, L., McManus, J., Kelly, P., 2021. Interleukin-6, C-reactive protein, fibrinogen, and risk of recurrence after ischaemic stroke: Systematic review and meta-analysis. *European Stroke Journal*. 6(1):62–71.
- Mehta, V., Prabhakar, R., Kumar, R., Jyoti, D. & Sharma, C.B. 2022. Fibrinogen as a Predictor of Early Neurological Deterioration and Poor Outcome in Acute Ischemic Stroke. *The Journal of the Association of Physicians of India*. 70(4):11–12. <https://pubmed.ncbi.nlm.nih.gov/35443419/> Date of access: 27 Aug. 2023.
- Meijer, R., Ihnenfeldt, D.S., van Limbeek, J., Vermeulen, M. & de Haan, R.J., 2003. Prognostic factors in the subacute phase after stroke for the future residence after six months to one year. A systematic review of the literature. *Clinical Rehabilitation*. 17(5):512–520.
- Mifsud, S., Schembri, E.L. & Gruppeta, M., 2018. Stress-induced hyperglycaemia. *British Journal of Hospital Medicine*. 79(11):634–639.
- Miller, C.M., Behrouz, R., 2016. Impact of Infection on Stroke Morbidity and Outcomes. *Curr. Neurol. Neurosci. Rep.* 16, 1-5.
- Montaner, J., Ramiro, L., Simats, A., Hernández-Guillamon, M., Delgado, P., Bustamante, A., *et al.*, 2019. Matrix metalloproteinases and ADAMs in stroke. *Cellular and Molecular Life Sciences*. 76(16):3117–3140.
- Nair, R., Radhakrishnan, K., Chatterjee, A., Gorthi, S.P. & Prabhu, V.A., 2018. Serum Albumin as a Predictor of Functional Outcomes Following Acute Ischemic Stroke. *Journal of vascular and interventional neurology*. 10(2):65–68. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6350867/> Date of access: 31 Aug. 2022.
- Nathan, D.M., Kuenen, J., Borg, R., Zheng, H., Schoenfeld, D. & Heine, R.J., 2008. Translating the A1C Assay Into Estimated Average Glucose Values. *Diabetes Care*. 31(8):1473–1478.

- Nesterova, A.P., Klimov, E.A., Zharkova, M., Sozin, S., Sobolev, V., Ivanikova, N.V., Yuryev, A., 2020. *Chapter 4 - Endocrine, nutritional, and metabolic diseases*. A.P. Nesterova, E.A. Klimov, M. Zharkova, S. Sozin, V. Sobolev, N.V. Ivanikova, M. Shkrob, & A. Yuryev, eds. *ScienceDirect*. Elsevier. <https://www.sciencedirect.com/science/article/abs/pii/B978012817086100004X>.
- Okamura, H., Tsutsui, H., Kashiwamura, S.-I., Yoshimoto, T. & Nakanishi, K., 1998. Interleukin-18: A Novel Cytokine That Augments Both Innate and Acquired Immunity. *Advances in Immunology*. 281–312.
- Olamoyegun, M.A., Akinlade, A.T., Fawale, B.M. & Ogbera, A.O., 2016. Dyslipidaemia as a risk factor in the occurrence of stroke in Nigeria: prevalence and patterns. *Pan African Medical Journal*. 25.
- Ong, C.-T. & Wu, C.-S., 2007. Neurological deterioration in patients with first-ever ischemic stroke. *Acta Neurologica Taiwanica*. 16(3):143–149. <https://pubmed.ncbi.nlm.nih.gov/17966953/> Date of access: 27 Aug. 2023.
- Osei, E., den Hertog, H.M., Berkhemer, O.A., Fransen, P.S.S., Roos, Y.B.W.E.M., Beumer, D., Dippel, D.W.J., 2016. Increased admission and fasting glucose are associated with unfavorable short-term outcome after intra-arterial treatment of ischemic stroke in the MR CLEAN pretrial cohort. *Journal of the Neurological Sciences*. 371:1–5.
- Pacific, W.H.O.R.O. for the W., 2000. *The Asia-Pacific perspective : redefining obesity and its treatment*. apps.who.int. Sydney : Health Communications Australia. <https://apps.who.int/iris/handle/10665/206936>.
- PERKENI, 2019. *Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 Dewasa di Indonesia*. Jakarta: PB Perkeni.
- Piironen, K., Putaala, J., Rosso, C. & Samson, Y., 2012. Glucose and Acute Stroke. *Stroke*. 43(3):898–902.
- Pikija, S., Milevčić, D., Trkulja, V., Kidemet-Piskač, S., Pavliček, I. & Sokol, N., 2006. Higher Serum Triglyceride Level in Patients with Acute Ischemic Stroke Is Associated with Lower Infarct Volume on CT Brain Scans. *European Neurology*. 55(2):89–92.
- Pradhani, D.N., Paryono & Kusumaharap, I., 2022. *PERAN HBA1C SEBAGAI PREDIKTOR PERBURUKAN LUARAN KLINIS STROKE ISKEMIK AKUT*. etd.repository.ugm.ac.id. <https://etd.repository.ugm.ac.id/penelitian/detail/216240> Date of access: 27 Aug. 2023.
- Prodjohardjono, A., Vidyanti, A.N., Susianti, N.A., Sudarmanta, Sutarni, S. & Setyopranoto, I., 2020. Higher level of acute serum VEGF and larger infarct volume are more frequently associated with post-stroke cognitive impairment. *PLOS ONE*. 15(10):e0239370.
- Pu, L., Wang, L., Zhang, R., Zhao, T., Jiang, Y. & Han, L., 2023. Projected Global Trends in Ischemic Stroke Incidence, Deaths and Disability-Adjusted Life Years From 2020 to 2030: 54(5):1330–1339.

- Rashid, A.S., Huang-Link, Y., Johnsson, M., Wetterhäll, S. & Gauffin, H., 2022. Predictors of Early Neurological Deterioration and Functional Outcome in Acute Ischemic Stroke: The Importance of Large Artery Disease, Hyperglycemia and Inflammatory Blood Biomarkers. *Neuropsychiatric Disease and Treatment*. 18:1993–2002.
- Reshi, R., Streib, C., Ezzeddine, M., Biros, M., Miller, B., Lakshminarayan, K., Ardelt, A., 2017. Hyperglycemia in acute ischemic stroke: Is it time to re-evaluate our understanding? *Medical Hypotheses*. 107:78–80.
- Ridzuan, N., John, C.M., Sandrasaigaran, P., Maqbool, M., Liew, L.C., Lim, J., *et al.*, 2016. Preliminary study on overproduction of reactive oxygen species by neutrophils in diabetes mellitus. *World Journal of Diabetes*. 7(13):271.
- Risso, A., Mercuri, F., Quagliaro, L., Damante, G. & Ceriello, A., 2001. Intermittent high glucose enhances apoptosis in human umbilical vein endothelial cells in culture. *American Journal of Physiology. Endocrinology and Metabolism*. 281(5):E924-930.
- Roberts, G., Sires, J., Chen, A., Thynne, T., Sullivan, C., Quinn, S., Meyer, E., 2021. A comparison of the Stress Hyperglycemia Ratio, Glycemic Gap, and glucose to assess the impact of stress-induced hyperglycemia on ischemic stroke outcome. *Journal of Diabetes*. (September, 18).
- Roberts, G.W., Quinn, S.J., Valentine, N., Alhawassi, T., O'Dea, H., Stranks, S.N., Doogue, M.P., 2015. Relative Hyperglycemia, a Marker of Critical Illness: Introducing the Stress Hyperglycemia Ratio. *The Journal of Clinical Endocrinology & Metabolism*. 100(12):4490–4497.
- Ropper, A.H., Samuels, M.A., Klein, J.P., 2019. Cerebrovascular Diseases. In: *Adams and Victor's Principles Of Neurology*. Ed 11th. McGraw-Hill, New York.
- Roquer, J., Rodríguez-Campello, A., Gomis, M., Jiménez-Conde, J., Cuadrado-Godia, E., Vivanco, R., Ois, A., 2008. Acute stroke unit care and early neurological deterioration in ischemic stroke. *Journal of Neurology*. 255(7):1012–1017.
- Roth, G.A., Mensah, G.A., Johnson, C.O., Addolorato, G., Ammirati, E., Baddour, L.M., Criqui, M., 2020. Global Burden of Cardiovascular Diseases and Risk Factors, 1990-2019: Update From the GBD 2019 Study. *Journal of the American College of Cardiology*. 76(25):2982–3021.
- Roy-O'Reilly, M. & McCullough, L.D., 2018. Age and Sex Are Critical Factors in Ischemic Stroke Pathology. *Endocrinology*. 159(8):3120–3131.
- Ryu, W.-S., Schellingerhout, D., Jeong, S.-W., Nahrendorf, M. & Kim, D.-E., 2016. Association between Serum Lipid Profiles and Early Neurological Deterioration in Acute Ischemic Stroke. *Journal of Stroke and Cerebrovascular Diseases*. 25(8):2024–2030.
- Sabel, J.L., Dauer, J.T. & Forbes, C.T., 2017. Introductory Biology Students' Use of Enhanced Answer Keys and Reflection Questions to Engage in Metacognition and Enhance Understanding. *CBE—Life Sciences Education*. 16(3):ar40.

- Sacco, R.L., Kasner, S.E., Broderick, J.P., Caplan, L.R., Connors, J.J.B., Culebras, A., Vinters, H.V., 2013. An updated definition of stroke for the 21st century: a statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. 44(7):2064–89.
- Saini, V., Guada, L. & Yavagal, D.R., 2021. Global Epidemiology of Stroke and Access to Acute Ischemic Stroke Interventions. *Neurology*. 97(20 Supplement 2):S6–S16.
- Sashindranath, M. & Nandurkar, H.H., 2021. Endothelial Dysfunction in the Brain. *Stroke*. 52(5):1895–1904.
- Sasmita, P.K. 2018. *HUBUNGAN KADAR MATRIX METALLOPROTEINASE-9 (MMP-9) DAN PROTEIN S100Beta DENGAN DEFISIT NEUROLOGI PASIEN PERDARAHAN INTRASEREBRAL AKUT*. etd.repository.ugm.ac.id.
<https://etd.repository.ugm.ac.id/penelitian/detail/163157> Date of access: 04 Sep. 2023.
- Schädlich, I.S., Winzer, R., Stabernack, J., Tolosa, E., Magnus, T. & Rissiek, B., 2023. The role of the ATP-adenosine axis in ischemic stroke. *Seminars in Immunopathology*. (March, 14).
- Scherbakov, N., Haeusler, K.G., Doehner, W. *et al.*, 2015. Ischemic Stroke and Heart Failure: Facts and Numbers. *ESC Heart Failure* 2015; 2: 1-4.
- Schroder, J. and Thomalla, G., 2017. A Critical Review of Alberta Stroke Program Early CT Score for Evaluation of Acute Stroke Imaging. *Frontiers in Neurology*, pp. 1-7.
- Setyopranoto, I., Bayuangga, H.F., Panggabean, A.S., Alifaningdyah, S., Lazuardi, L., Dewi, F.S.T., *et al.*, 2019. Prevalence of Stroke and Associated Risk Factors in Sleman District of Yogyakarta Special Region, Indonesia. *Stroke Research and Treatment*. 2019:1–8.
- Setyopranoto, I., Malueka, R.G., Panggabean, A.S., Widyadharma, I.P.E., Sadewa, A.H., Lamsudin, R., *et al.*, 2018. Association between Increased Matrix Metalloproteinase-9 (MMP-9) Levels with Hyperglycaemia Incidence in Acute Ischemic Stroke Patients. *Open Access Macedonian Journal of Medical Sciences*. 6(11):2067–2072.
- Shah, S.P., Shrestha, A., Pandey, S.R., Sigdel, K., Sah, N., Panthi, S., *et al.*, 2022. Dyslipidemia in Acute Non-cardioembolic Ischemic Stroke Patients at a Tertiary Care Centre: A Descriptive Cross-sectional Study. *JNMA: Journal of the Nepal Medical Association*. 60(247):241–245.
- Shi, Z., Guan, Y., Huo, Y.R., Liu, S., Zhang, M., Lu, H., Ji, Y., 2015. Elevated Total Homocysteine Levels in Acute Ischemic Stroke Are Associated With Long-Term Mortality. *Stroke*. 46(9):2419–2425.
- Shimoyama, T., Kimura, K., Uemura, J., Saji, N. & Shibazaki, K., 2013. Elevated glucose level adversely affects infarct volume growth and neurological deterioration in non-diabetic stroke patients, but not diabetic stroke patients. *European Journal of Neurology*. 21(3):402–410.
- Shoaeb, M.A., Shehata, M.A., Taema, K.M. & Hammouda, M.A., 2014. CRP in cerebrovascular stroke: Prognostic implications. *The Egyptian Journal of Critical Care Medicine*. 2(1):43–52.

- Siegler, J.E., Albright, K.C., George, A.J., Boehme, A.K., Gillette, M.A., Kumar, A.D., Martin-Schild, S., 2016. Time to Neurological Deterioration in Ischemic Stroke. *Medical Student Research Journal*. 3(0).
- Siegler, J.E., Boehme, A.K., Kumar, A.D., Gillette, M.A., Albright, K.C. & Martin-Schild, S., 2013. What Change in the National Institutes of Health Stroke Scale Should Define Neurologic Deterioration in Acute Ischemic Stroke? *Journal of Stroke and Cerebrovascular Diseases*. 22(5):675–682.
- Siegler, J.E., Samai, A., Semmes, E. & Martin-Schild, S., 2016. Early Neurologic Deterioration after Stroke Depends on Vascular Territory and Stroke Etiology. *Journal of Stroke*. 18(2):203–210.
- Sims, N.R. & Muyderman, H. 2010. Mitochondria, oxidative metabolism and cell death in stroke. *Biochimica et Biophysica Acta (BBA) - Molecular Basis of Disease*. 1802(1):80–91.
- Soeki, T. & Sata, M., 2016. Inflammatory Biomarkers and Atherosclerosis. *International Heart Journal*. 57(2):134–139.
- Spronk, E., Sykes, G., Falcione, S., Munsterman, D., Joy, T., Kamtchum-Tatuene, J., *et al.*, 2021. Hemorrhagic Transformation in Ischemic Stroke and the Role of Inflammation. *Frontiers in Neurology*. 12.
- Suda, S., Katsumata, T., Okubo, S., Kanamaru, T., Suzuki, K., Watanabe, Y., Katayama, Y., 2013. Low Serum n-3 Polyunsaturated Fatty Acid/n-6 Polyunsaturated Fatty Acid Ratio Predicts Neurological Deterioration in Japanese Patients with Acute Ischemic Stroke. *Cerebrovascular Diseases*. 36(5-6):388–393.
- Talukder, R.K., Uddin, M.J., Battacharjee, M., Akhter, H., Pandit, H., Pandit, P., Khan, M.M., 2018. Stress Hyperglycemia and Stroke Outcome in Patients with Acute Stroke. *Mymensingh medical journal: MMJ*. 27(4):685–692. <https://pubmed.ncbi.nlm.nih.gov/30487481/>.
- Tan, K.-S., Yoon, B.-W., Lin, R.-T., Mehndiratta, M.M., Suwanwela, N.C. & Venketasubramanian, N., 2022. 10th Anniversary of the Asia Pacific Stroke Organization: State of Stroke Care and Stroke Research in the Asia-Pacific. *Cerebrovascular Diseases Extra*. 12(1):14–22.
- Tan, Y., Meng Wei. Cheong & Wai San Cheang, 2022. Roles of Reactive Oxygen Species in Vascular Complications of Diabetes: Therapeutic Properties of Medicinal Plants and Food. 2(3):246–268.
- Tao, J., Hu, Z., Lou, F., Wu, J., Wu, Z., Yang, S., Ren, W., 2022. Higher Stress Hyperglycemia Ratio Is Associated With a Higher Risk of Stroke-Associated Pneumonia. *Frontiers in Nutrition*. 9:784114.
- Tarr, D., Graham, D., Roy, L.A., Holmes, W.M., McCabe, C., Mhairi Macrae, I., Dewar, D., 2013. Hyperglycemia accelerates apparent diffusion coefficient-defined lesion growth after focal cerebral ischemia in rats with and without features of metabolic syndrome. *Journal of Cerebral Blood Flow and Metabolism: Official Journal of the International Society of Cerebral Blood Flow and Metabolism*. 33(10):1556–1563.

- Thorén, M., Azevedo, E., Dawson, J., Egido, J.A., Falcou, A., Ford, G.A., Ahmed, N., 2017. Predictors for Cerebral Edema in Acute Ischemic Stroke Treated With Intravenous Thrombolysis. *Stroke*. 48(9):2464–2471.
- Toth, C., Schmidt, A.M., Tuor, U.I., Francis, G., Foniok, T., Brussee, V., Zochodne, D.W., 2006. Diabetes, leukoencephalopathy and rage. *Neurobiology of Disease*. 23(2):445–461.
- Tziomalos, K., Dimitriou, P., Bouziana, S.D., Spanou, M., Kostaki, S., Angelopoulou, S.-M., Hatzitolios, A.I., 2017. Stress hyperglycemia and acute ischemic stroke in-hospital outcome. *Metabolism*. 67:99–105.
- Tziomalos, K., Giampatzis, V., Bouziana, S.D., Spanou, M., Kostaki, S., Papadopoulou, M., Hatzitolios, A.I., 2016. Prognostic significance of major lipids in patients with acute ischemic stroke. *Metabolic Brain Disease*. 32(2):395–400.
- Tziomalos, K., Giampatzis, V., Bouziana, S.D., Spanou, M., Kostaki, S., Papadopoulou, M., Hatzitolios, A.I., 2016. Prognostic significance of major lipids in patients with acute ischemic stroke. *Metabolic Brain Disease*. 32(2):395–400.
- Vargas, M., Horcajada, J.P., Obach, V., Revilla, M., *et al.*, 2006. Clinical consequences of infection in patients with acute stroke: Is it prime time for further antibiotic trial? *Stroke* 37, 461–465.
- Vemmos, K., George, N., Paraskevi, S., Anastasia, M.V., *et al.*, 2012. Stroke etiology and predictors of outcome in patients with heart failure and acute stroke: a 10 year follow up study. *European Journal Of Heart Failure*, 14, pp. 211–218.
- Venkatasubramanian, N., Yoon, B.W., Pandian, J. & Navarro, J.C., 2017. Stroke Epidemiology in South, East, and South-East Asia: A Review. *Journal of Stroke*. 19(3):286–294.
- Wang, J., Zhang, X., Tian, J., Li, H., Tang, H. & Yang, C., 2022. Predictive values of systemic inflammatory responses index in early neurological deterioration in patients with acute ischemic stroke. *Journal of Integrative Neuroscience*. 21(3):94.
- Wang, L., Cheng, Q., Hu, T., Wang, N., Wei, X., Wu, T., *et al.*, 2022. Impact of Stress Hyperglycemia on Early Neurological Deterioration in Acute Ischemic Stroke Patients Treated With Intravenous Thrombolysis. *Frontiers in Neurology*. 13.
- Wang, L., Zhou, Z., Tian, X., Wang, H., Yang, D., Hao, Y., Liu, X., 2019. Impact of Relative Blood Glucose Changes on Mortality Risk of Patient with Acute Ischemic Stroke and Treated with Mechanical Thrombectomy. *Journal of Stroke and Cerebrovascular Diseases*. 28(1):213–219.
- Wang, X., Wang, Y., Wang, C., *et al.*, 2014. Association between estimated glomerular filtration rate and clinical outcomes in patients with acute ischaemic stroke: results from China National Stroke Registry. *Age and Ageing*, 43(6), 839–845. doi:10.1093/ageing/afu090.
- Willmot, M., Leonardi-Bee, J. & Bath, P.M.W., 2004. High Blood Pressure in Acute Stroke and Subsequent Outcome. *Hypertension*. 43(1):18–24.

- Wouters, A., Nysten, C., Thijs, V. & Lemmens, R., 2018. Prediction of Outcome in Patients With Acute Ischemic Stroke Based on Initial Severity and Improvement in the First 24 h. *Frontiers in Neurology*. 9.
- Xing, Y., 2016. Low Density Lipoprotein Cholesterol and the Outcome of Acute Ischemic Stroke ; Result of a Large Hospital-Based Study. *Eur Neurol* pp.195-201. DOI: 10.1159/000450604.
- Xu, W., Yang, Y., Zhu, J., Wu, S., Wang, J., Zhang, H., *et al.*, 2022. Predictive value of the stress hyperglycemia ratio in patients with acute ST-segment elevation myocardial infarction: insights from a multi-center observational study. *Cardiovascular Diabetology*. 21(1).
- Yang, C.-J., Liao, W.-I., Wang, J.-C., Tsai, C.-L., Lee, J.-T., Peng, G.-S., Tsai, S.-H., 2017. Usefulness of glycated hemoglobin A1c-based adjusted glycemic variables in diabetic patients presenting with acute ischemic stroke. *The American Journal of Emergency Medicine*. 35(9):1240–1246.
- Yang, Y., Kim, T.-H., Yoon, K.-H., Chung, W.S., Ahn, Y., Jeong, M.-H., Chang, K., 2017. The stress hyperglycemia ratio, an index of relative hyperglycemia, as a predictor of clinical outcomes after percutaneous coronary intervention. *International Journal of Cardiology*. 241:57–63.
- Yang, Z., Tian, Y., Liu, Y., Hennessy, S., Kron, I.L. & French, B.A., 2013. Acute Hyperglycemia Abolishes Ischemic Preconditioning by Inhibiting Akt Phosphorylation: Normalizing Blood Glucose before Ischemia Restores Ischemic Preconditioning. *Oxidative Medicine and Cellular Longevity*. 2013:1–8.
- Ye, N., Liu, Z., Wang, X., Xu, X. & Wu, W., 2020. Evaluation of analytic and clinical performance of thrombin-antithrombin complex and D-dimer assay in prognosis of acute ischemic stroke. *Blood Coagulation & Fibrinolysis: An International Journal in Haemostasis and Thrombosis*. 31(5):303–309.
- Ye, X.-H., Cai, X.-L., Nie, D.-L., Chen, Y.-J., Li, J.-W., Xu, X.-H., Gao, F., 2020. Stress-Induced Hyperglycemia and Remote Diffusion-Weighted Imaging Lesions in Primary Intracerebral Hemorrhage. *Neurocritical Care*. 32(2):427–436.
- Yoshiyuki Wakugawa, Kiyohara, Y., Yumihiro Tanizaki, Kubo, M., Ninomiya, T., Hata, J., Iida, M., 2006. C-Reactive Protein and Risk of First-Ever Ischemic and Hemorrhagic Stroke in a General Japanese Population. *Stroke*. 37(1):27–32.
- You, S., Zheng, D., Delcourt, C., Sato, S., Cao, Y., Zhang, S., Chalmers, J., 2019. Determinants of Early Versus Delayed Neurological Deterioration in Intracerebral Hemorrhage. *Stroke*. 50(6):1409–1414.
- Yu, X.-Y., Chen, H.-M., Liang, J.-L., Lin, Q.-X., Tan, H.-H., Fu, Y.-H., Lin, S.-G., 2011. Hyperglycemic Myocardial Damage Is Mediated by Proinflammatory Cytokine: Macrophage Migration Inhibitory Factor. *PLoS ONE*. 6(1):e16239.
- Yuan, C., Chen, S., Ruan, Y., Liu, Y., Cheng, H., Zeng, Y., He, J., 2021. The Stress Hyperglycemia Ratio is Associated with Hemorrhagic

- Transformation in Patients with Acute Ischemic Stroke. *Clinical Interventions in Aging*. 16:431–442.
- Zao, Y., Zou, C., Wang, C., *et al.*, 2016. Long -Term Outcomes after Stroke in Elderly Patients with Atrial Fibrillation : A Hospital-Based Follow-Up Study in China. *Front. Aging Neurosci.* 8, 1-6.
- Zhang, J., Cui, Q., Zhao, Y., Guo, R., Zhan, C., Jiang, P., Xu, Y., 2020. Mechanism of angiogenesis promotion with Shexiang Baoxin Pills by regulating function and signaling pathway of endothelial cells through macrophages. *Atherosclerosis*. 292:99–111.
- Zhang, M., Xing, P., Tang, J., Shi, L., Yang, P., Zhang, Y., Liu, J., 2022. Predictors and outcome of early neurological deterioration after endovascular thrombectomy: a secondary analysis of the DIRECT-MT trial. *Journal of NeuroInterventional Surgery*. (June, 10).
- Zhang, W., Sun, K., Chen, J., Liao, Y., Qin, Q., Ma, A., Hui, R., 2009. High plasma homocysteine levels contribute to the risk of stroke recurrence and all-cause mortality in a large prospective stroke population. *Clinical Science*. 118(3):187–194.
- Zhang, Z., Gu, X., Fang, X., Tang, Z., Guan, S., Liu, H., Zhao, Y., 2020. Homocysteine and the Risk of Cardiovascular Events and All-Cause Death in Elderly Population: A Community-Based Prospective Cohort Study. *Therapeutics and Clinical Risk Management*. Volume 16:471–481.
- Zheng, D., Cao, H., Wang, R., Li, L., Guo, H., Zhang, X., Xu, G., 2023. Impacts of stress hyperglycemia ratio on early neurological deterioration and functional outcome after endovascular treatment in patients with acute ischemic stroke. *Frontiers in Endocrinology*.
- Zhong, C., Yang, J., Xu, T., Xu, T., Peng, Y., Wang, A., He, J., 2017. Serum matrix metalloproteinase-9 levels and prognosis of acute ischemic stroke. *Neurology*. 89(8):805–812.
- Zhuo, Y., Qu, Y., Wu, J., Huang, X., Yuan, W., Lee, J., Zee, B., 2021. Estimation of stroke severity with National Institutes of Health Stroke Scale grading and retinal features. *Medicine*. 100(31):e26846.