

- Akmelia, C et al. 2021, 'Efficacy of channa striata extract capsule (vipalbumin®) for serum albumin level and wound healing postradical hysterectomy in cervical cancer patients', *Indonesian Journal of Obstetrics and Gynecology*, vol. 9, no. 3, pp. 149–152.
- Barr, J. et al. (2004) "Outcomes in Critically Ill Patients Before and After the Implementation of an Evidence-Based Nutritional Management Protocol," *Chest*, 125(4), pp. 1446–1457. Available at: <https://doi.org/10.1378/chest.125.4.1446>.
- Biolo, G. (1997) "Metabolic Response to Injury and Sepsis: Changes in Protein Metabolism," *Nutrition*, 13(9), pp. 52S-57S. Available at: [https://doi.org/10.1016/s0899-9007\(97\)00206-2](https://doi.org/10.1016/s0899-9007(97)00206-2).
- Bone, R.C. et al. (1992) "Definitions for Sepsis and Organ Failure and Guidelines for the Use of Innovative Therapies in Sepsis," *Chest*, 101(6), pp. 1644–1655. Available at: <https://doi.org/10.1378/chest.101.6.1644>.
- Brock, F. et al. (2016) "Prevalence of hypoalbuminemia and nutritional issues in hospitalized elders," *Rev. Lat Am Enfermagem*, 24(0). Available at: <https://doi.org/10.1590/1518-8345.0260.2736>.
- Chen, CM et al. 2014, 'Age may not influence the outcome of patients with severe sepsis in intensive care units', *International Journal of Gerontology*, vol. 8, no. 1, pp. 22–26, <<http://dx.doi.org/10.1016/j.ijge.2013.08.004>>.
- Chowdhury, R. and Lobaz, S. (2019) "Nutrition in critical care," *BJA Education*, 19(3), pp. 90–95. Available at: <https://doi.org/10.1016/j.bjae.2018.11.007>.
- Dellinger, R.P. et al. (2013) "Surviving Sepsis Campaign: International Guidelines for Management of Severe Sepsis and Septic Shock, 2012," *Intensive Care Medicine*, 39(2), pp. 165–228. Available at: <https://doi.org/10.1007/s00134-012-2769-8>.
- Devaraj S. (2015) "Albumin" [Internet]. Medscape. [cited 2019 May 11]. Available from: <https://emedicine.medscape.com/article/2054430-overview#a1>
- Evans, Laura¹; Rhodes, Andrew²; Alhazzani, Waleed³; Antonelli, Massimo⁴; Coopersmith, Craig M.⁵; French, Craig⁶; Machado, Flávia R.⁷; et.al. Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock 2021. *Critical Care Medicine* 49(11):p e1063-e1143, November 2021. | DOI: 10.1097/CCM.0000000000005337
- Fani, S, Hendrik, F, & Akbar, IB 2022, 'Hubungan Hipoalbuminemia dengan Mortalitas Pasien Pneumonia di RSUD Subang Tahun 2020-2022', , pp. 473–479.
- Fleck, A., Raines, G., Hawker, F., Trotter, J., Wallace, P. I., Ledingham, I. M., & Calman, K. C. (1985). Increased vascular permeability: a major cause of hypoalbuminaemia in disease and injury. *Lancet* (London, England), 1(8432), 781–784. [https://doi.org/10.1016/s0140-6736\(85\)91447-3](https://doi.org/10.1016/s0140-6736(85)91447-3)
- Griffiths, R.E. and Bongers, T. (2005) "Nutrition support for patients in the intensive care unit," *Postgraduate Medical Journal*, 81(960), pp. 629–636. Available at: <https://doi.org/10.1136/pgmj.2005.033399>.



- Heyland, D.K. *et al.* (2013) “Enhanced Protein-Energy Provision via the Enteral Route Feeding Protocol in Critically Ill Patients,” *Critical Care Medicine*, 41(12), pp. 2743–2753. Available at: <https://doi.org/10.1097/ccm.0b013e31829efef5>.
- Holler, JG *et al.* 2015, ‘Nontraumatic hypotension and shock in the emergency department and the prehospital setting, prevalence, etiology, and mortality: a systematic review.’, *PloS one*, vol. 10, no. 3, p. e0119331.
- Kanmani, S *et al.* 2019, ‘Association of C-Reactive Protein with Risk of Developing Type 2 Diabetes Mellitus, and Role of Obesity and Hypertension: A Large Population-Based Korean Cohort Study’, *Scientific Reports*, vol. 9, no. 1, pp. 1–8, <<http://dx.doi.org/10.1038/s41598-019-40987-8>>.
- Klang, E *et al.* 2021, ‘Synergistic effect of hypoalbuminaemia and hypotension in predicting in-hospital mortality and intensive care admission: a retrospective cohort study’, *BMJ Open*, vol. 11, no. 10, pp. 1–7.
- Kurniawan, W, Rumende, CM, & Harimurti, K 2017, ‘Hipoalbuminemia pada Pasien Usia Lanjut dengan Pneumonia Komunitas: Prevalensi dan Pengaruhnya Terhadap Kesintasan’, *Jurnal Penyakit Dalam Indonesia*, vol. 1, no. 2, p. 79.
- Kusumawardhani, E. 2016. Pengaruh Pemberian Ekstrak Ikan Gabus Terhadap Kadar Tnf-A, Crp Dan Skor Cat (*Copd Assessment Test*) Pada Pasien Ppok Stabil Yang Mengalami Muscle Wasting. Universitas Brawijaya.
- Levitt D, Levitt M. 2016, Human serum albumin homeostasis: a new look at the roles of synthesis, catabolism, renal and gastrointestinal excretion, and the clinical value of serum albumin measurements. *Int J Gen Med.*;9:229-255. <https://doi.org/10.2147/IJGM.S102819>
- Martin, GS, Mannino, DM, & Moss, M 2006, ‘The effect of age on the development and outcome of adult sepsis.’, *Critical care medicine*, vol. 34, no. 1, pp. 15–21.
- Mayr, F.B., Yende, S. and Angus, D.C. (2014) “Epidemiology of severe sepsis,” *Virulence*, 5(1), pp. 4–11. Available at: <https://doi.org/10.4161/viru.27372>.
- McClave, S.A. *et al.* (2009) “Guidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patient,” *Journal of Parenteral and Enteral Nutrition*, 40(2), pp. 159–211. Available at: <https://doi.org/10.1177/0148607115621863>.
- Nguyen HB, Rivers EP, Abrahamian FM, Moran GJ, Abraham E, Trzeciak S, Huang DT, Osborn T, Stevens D, Talan DA., Emergency Department Sepsis Education Program and Strategies to Improve Survival (ED-SEPSIS) Working Group. Severe sepsis and septic shock: review of the literature and emergency department management guidelines. *Ann Emerg Med.* 2006 Jul;48(1):28-54. [PubMed]
- Nicholson, J.P., Wolmarans and Park, G.-S. (2000) “The role of albumin in critical illness,” *BJA: British Journal of Anaesthesia*, 85(4), pp. 599–610. Available at: <https://doi.org/10.1093/bja/85.4.599>.
- Nugroho, A 2016, ‘Perbandingan efektivitas terapi albumin ekstrak ikan gabus murni dibanding human albumin 20% terhadap kadar albumin dan pH darah pada pasien hipoalbuminemia’, , vol. 9, no. 2, p. 10,



- Omiya, K., Sato, H., Sato, T. et al. Albumin and fibrinogen kinetics in sepsis: a prospective observational study. *Crit Care* 25, 436 (2021). <https://doi.org/10.1186/s13054-021-03860-7>
- Pepys, MB & Hirschfield, GM 2003, 'C-reactive protein: a critical update.', *The Journal of clinical investigation*, vol. 111, no. 12, pp. 1805–1812.
- P, Singh; S, Khan; A. H., Siddiqui (2013) "*Hypoalbuminemia: a hospital based study*". *INDONESIAN JOURNAL OF BIOMEDICAL SCIENCES*, [S.l.], v. 6, n. 2, jan. 2013. ISSN 2302-2906. Available at: <https://ojs.unud.ac.id/index.php/ijbs/article/view/4494>
- Peralta, R. (2018) "*Hypoalbuminemia: background, pathophysiology, etiology*" [Internet]. Medscape. [cited 2019 Mar 28]. Available from: <https://emedicine.medscape.com/article/166724-overview#a4>
- Plank, L.D. (2013) "Protein for the critically ill patient—what and when?," *European Journal of Clinical Nutrition*, 67(5), pp. 565–568. Available at: <https://doi.org/10.1038/ejcn.2013.34>.
- Plevin, R., & Callcut, R. (2017). Update in sepsis guidelines: what is really new?. *Trauma surgery & acute care open*, 2(1), e000088. <https://doi.org/10.1136/tsaco-2017-000088>
- Pratiwi, A.B. (2021) "The Potensi Ikan Gabus (*Ophiocephalus striatus*) untuk Meningkatkan Kadar Albumin Pada Penderita Hipoalbuminemia," *JIMKI: Jurnal Ilmiah Mahasiswa Kedokteran Indonesia*, 8(3), pp. 204–210. Available at: <https://doi.org/10.53366/jimki.v8i3.254>.
- Purwanto DS, Astrawinata DA.2018. Mekanisme Kompleks Sepsis dan Syok Septik. E-Journal UNSRAT.
- Purwanto DS, Astrawinata DA.2019.Pemeriksaan Laboratorium sebagai Indikator Sepsis dan Syok Septik. E-Journal UNSRAT. <https://ejournal.unsrat.ac.id/v3/index.php/biomedik/article/download/23204/22905/47358>
- Putranto, W et al. 2023, 'The Effect of *Channa striata* Extract on Serum Albumin and High Sensitive C-Reactive Protein in End-Stage Renal Disease Patients: A Randomized Controlled Trial', *Pharmacognosy Journal*, vol. 15, no. 1, pp. 1–5.
- Raynaud-Simon, A., Revel-Delhom, C. and Hébuterne, X. (2011) "Clinical practice guidelines from the French health high authority: Nutritional support strategy in protein-energy malnutrition in the elderly," *Clinical Nutrition*, 30(3), pp. 312–319. Available at: <https://doi.org/10.1016/j.clnu.2010.12.003>.
- Soediaoetama, A.D. 1998. Ilmu Gizi. Dian Rakyat. Jakarta
- Salazar J, Martínez MS, Chávez-Castillo M, Núñez V, Añez R, Torres Y, Toledo A, Chacín M, Silva C, Pacheco E, Rojas J, Bermúdez V. C-Reactive Protein: An In-Depth Look into Structure, Function, and Regulation. *Int Sch Res Notices*. 2014 Dec 15;2014:653045. doi: 10.1155/2014/653045. PMID: 27433484; PMCID: PMC4897210.
- Sanjaya, BD et al. 2022, 'Sepsis Risk Factors in Elderly Patients At Royal Prima Medan General Hospital', *Jambura Journal of Health Sciences and Research*, vol. 4, no. 3, pp. 596–603.



- Singer, M. *et al.* (2016) “The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3),” *JAMA*, 315(8), p. 801. Available at: <https://doi.org/10.1001/jama.2016.0287>.
- Singer, P. *et al.* (2011) “The tight calorie control study (TICACOS): a prospective, randomized, controlled pilot study of nutritional support in critically ill patients,” *Intensive Care Medicine*, 37(4), pp. 601–609. Available at: <https://doi.org/10.1007/s00134-011-2146-z>.
- Singer, P. *et al.* (2019) “ESPEN guideline on clinical nutrition in the intensive care unit,” *Clinical Nutrition*, 38(1), pp. 48–79. Available at: <https://doi.org/10.1016/j.clnu.2018.08.037>.
- Sproston NR, Ashworth JJ. Role of C-Reactive Protein at Sites of Inflammation and Infection. *Front Immunol*. 2018 Apr 13;9:754. doi: 10.3389/fimmu.2018.00754. PMID: 29706967; PMCID: PMC5908901.
- Tian, Y *et al.* 2021, ‘Urea-to-Albumin Ratio and In-Hospital Mortality in Severe Pneumonia Patients.’, *The Canadian journal of infectious diseases & medical microbiology = Journal canadien des maladies infectieuses et de la microbiologie medicale*, vol. 2021, p. 5105870.
- Travlos, A *et al.* 2022, ‘C-Reactive Protein as a Predictor of Survival and Length of Hospital Stay in Community-Acquired Pneumonia’, *Journal of Personalized Medicine*, vol. 12, no. 10.
- Usmadi, U 2020, ‘Pengujian Persyaratan Analisis (Uji Homogenitas Dan Uji Normalitas)’, *Inovasi Pendidikan*, vol. 7, no. 1, pp. 50–62.
- Utariani, A., Prasetyo, B. and Nugraha, J. (2017) “Correlation Between The Use Of Albumin Infusion And Concentrations Of Serum Albumin, Proinflammatory Cytokines (Tnf- α , Il6) And Sofa Score In Septic Patients,” *Folio Medica Indonesiana*, 52(4), p. 310. Available at: <https://doi.org/10.20473/fmi.v52i4.5481>.
- Vary, T.C., Voisin, L. and Cooney, R.N. (1996) “Regulation of peptide-chain initiation in muscle during sepsis by interleukin-1 receptor antagonist,” *American Journal of Physiology-endocrinology and Metabolism*, 271(3), pp. E513–E520. Available at: <https://doi.org/10.1152/ajpendo.1996.271.3.e513>.
- Vesali, R.F. *et al.* (2002) “Longitudinal pattern of glutamine/glutamate balance across the leg in long-stay intensive care unit patients,” *Clinical Nutrition*, 21(6), pp. 505–514. Available at: <https://doi.org/10.1054/clnu.2002.0583>.
- Weijs, P.J.M. *et al.* (2019) “Protein Intake, Nutritional Status and Outcomes in ICU Survivors: A Single Center Cohort Study,” *Journal of Clinical Medicine*, 8(1), p. 43. Available at: <https://doi.org/10.3390/jcm8010043>.
- Wischmeyer, P.E. (2012) “Parenteral nutrition and calorie delivery in the ICU,” *Current Opinion in Critical Care*, 18(2), pp. 164–173. Available at: <https://doi.org/10.1097/mcc.0b013e3283514be5>
- Wu, J *et al.* 2015, ‘Evaluation and significance of C-reactive protein in the clinical diagnosis of severe pneumonia.’, *Experimental and therapeutic medicine*, vol. 10, no. 1, pp. 175–180.



Pengaruh Pemberian Suplementasi Ekstrak Ikan Gabus (*Channa Striata*) Terhadap Rasio Kadar CRP Albumin Pada Pasien Syok Septik

Aditya Pradana Kartinofan, dr. Akhmad Yun Jufan, M.Sc, Sp.An-TI, Subsp.T.I(K) dan Dr. dr. Juni Kurniawaty, Sp.AnT

UNIVERSITAS
GADJAH MADA

Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Zhang, C, Zheng, F, & Wu, X 2023, 'Predictive value of C-reactive protein-to-albumin ratio for risk of 28-day mortality in patients with severe pneumonia', *Journal of Laboratory Medicine*, vol. 47, no. 3, pp. 115–120, <<https://doi.org/10.1515/labmed-2022-0114>>.

Zhou J, Deng Y, Zhou G. 2019. The mitochondrial genome of striped snakehead *Channa striata* (Perciformes: Channidae) and phylogenetic analysis. *Mitochondrial DNA Part B*,4(2):3110-3111.

<https://www.tandfonline.com/doi/abs/10.1080/23802359.2019.1667892>