

DAFTAR PUSTAKA

- A F de Souza, I., M H Padrao, E., R Marques, I., A Miyawaki, I., Riceto Loyola Júnior, J.E., Caporal S Moreira, V., *et al.* (2023). Diagnostic Accuracy of ECG to Detect Left Ventricular Hypertrophy in Patients with Left Bundle Branch Block: A Systematic Review and Meta-analysis. *CJC open* 5 : 971–980. Available at: <https://doi.org/10.1016/j.cjco.2023.08.010>
- Akiki, N., Hodroj, M.H., Bou-Fakhredin, R., Matli, K., & Taher, A.T. (2023). Cardiovascular Complications in β -Thalassemia Getting to the Heart of It.pdf. *Thalass. reports* 13 : 38–50.
- Auger, D., & Pennell, D.J. (2016). Cardiac complications in thalassemia major. *Ann. N. Y. Acad. Sci.* 1368 : 56–64. Available at: <https://doi.org/10.1111/nyas.13026>
- Bacharova, L., Chevalier, P., Gorenek, B., Jons, C., Li, Y.-G., Locati, E.T., *et al.* (2024). ISE/ISHNE expert consensus statement on the ECG diagnosis of left ventricular hypertrophy: The change of the paradigm. *Ann. Noninvasive Electrocardiol.* 29 : e13097. Available at: <https://doi.org/https://doi.org/10.1111/anec.13097>
- Bayram, N., Akoğlu, H., Sanri, E., Karacabey, S., Efeoglu, M., Onur, O., *et al.* (2021). Diagnostic Accuracy of the Electrocardiography Criteria for Left Ventricular Hypertrophy (Cornell Voltage Criteria, Sokolow-Lyon Index, Romhilt-Estes, and Peguero-Lo Presti Criteria) Compared to Transthoracic Echocardiography. *Cureus* 13 : 3–9. Available at: <https://doi.org/10.7759/cureus.13883>
- Bornstein, A., Rao, S., & Marwaha, K. (2023). Left Ventricular Hypertrophy [WWW Document]. *StatPearls Publ.* URL <https://www.ncbi.nlm.nih.gov/books/NBK557534/> (accessed 3.16.26).
- Bornstein, A.B., Rao, S.S., & Marwaha, K. (2023). Left Ventricular Hypertrophy. *StatPearls [Internet]. Treasure Isl.*
- Cappellini, M., Alassaf, A., Michael, A., & Emanuele, A. (2022). Management of Transfusion Dependent Thalassaemia (Tdt) a Short Guide, Thalassaemia International Federation.
- Detterich, J., Noetzli, L., Dorey, F., Bar-cohen, Y., Harmatz, P., Coates, T., *et al.* (2012). Electrocardiographic consequences of cardiac iron overload in thalassemia major 139–144. Available at: <https://doi.org/10.1002/ajh.22205>
- Di Gioia, G., Creta, A., Campanale, C.M., Fittipaldi, M., Giorgino, R., Quintarelli, F., *et al.* (2016). ECG is an inefficient screening-tool for left ventricular hypertrophy in normotensive African children population. *PeerJ* 4 : e2439. Available at: <https://doi.org/10.7717/peerj.2439>
- Duca, L., Di Pierro, E., Scaramellini, N., Granata, F., & Graziadei, G. (2025). The Relationship Between Non-Transferrin-Bound Iron (NTBI), Labile Plasma Iron (LPI), and Iron Toxicity. *Int. J. Mol. Sci.* 26. Available at: <https://doi.org/10.3390/ijms26136433>
- Fatima, S., Zhou, H., Chen, Y., & Liu, Q. (2024). Role of ferroptosis in the pathogenesis of heart disease. *Front. Physiol.* 1–13. Available at: <https://doi.org/10.3389/fphys.2024.1450656>
- Fu, C., & Yang, X. (2025). Cardiac injury caused by iron overload in thalassemia.

- Front. Pediatr.* 1–13. Available at: <https://doi.org/10.3389/fped.2025.1514722>
- Hernaningsih, Y., Syafitri, Y., Indrasari, Y.N., Rahmawan, P.A., Andarsini, M.R., Lesmana, I., *et al.* (2022). Analysis of Common Beta-Thalassemia (β -Thalassemia) Mutations in East Java, Indonesia. *Front. Pediatr.* Available at: <https://doi.org/10.3389/fped.2022.925599>
- Kementerian Kesehatan RI. 2018. *Pedoman Nasional Pelayanan Kedokteran Tata Laksana Thalassemia*. Jakarta: Kementerian Kesehatan Republik Indonesia
- Isa Tafreshi, R., Radgoodarzi, M., Arjmandi Rafsanjani, K., & Soheilipour, F. (2022). Subclinical Left Ventricular Dysfunction in Children and Adolescence With Thalassemia Intermedia. *Front. Pediatr.* Volume 10-2022. Available at: <https://doi.org/10.3389/fped.2022.774528>
- Iswari, B., Supriyanto, D., Suhailin, D., Sasongko, A., Hasnaim, A., Handayani, E., *et al.* (2023). Petunjuk Teknis Pencegahan Infeksi Menular Lewat Transfusi Darah (IMLTD). Jakarta : Kementerian Kesehatan RI.
- Khan, A., & Rehman, A.U. (2025). Laboratory Evaluation of Beta Thalassemia, in: *StatPearls [Internet]. Treasure Island (FL)*. StatPearls Publishing.
- Killian, L., Simpson, J., Savis, A., Rawlins, D., & Sinha, M. (2010). Electrocardiography is a poor screening test to detect left ventricular hypertrophy in children. *rchives Dis. Child.* 95 : 832–836.
- Kohgo, Y., Ikuta, K., Ohtake, T., Torimoto, Y., & Kato, J. (2008). Body iron metabolism and pathophysiology of iron overload. *Int. J. Hematol.* 88 : 7–15. Available at: <https://doi.org/10.1007/s12185-008-0120-5>
- Kremastinos, D.T., Farmakis, D., Aessopos, A., Hahalis, G., Hamodraka, E., Tsiapras, D., *et al.* (2010). β -Thalassemia Cardiomyopathy. *Circ. Hear. Fail.* 3 : 451–458. Available at: <https://doi.org/10.1161/CIRCHEARTFAILURE.109.913863>
- Leecharoenkiat, K., Lithanatudom, P., Sornjai, W., & Smith, D.R. (2016). Iron dysregulation in beta-thalassemia. *Asian Pac. J. Trop. Med.* 9 : 1035–1043. Available at: <https://doi.org/https://doi.org/10.1016/j.apjtm.2016.07.035>
- Lekawanvijit, S., & Chattipakorn, N. (2009). Iron overload thalassemic cardiomyopathy: Iron status assessment and mechanisms of mechanical and electrical disturbance due to iron toxicity. *Can. J. Cardiol.* 25 : 213–218. Available at: [https://doi.org/10.1016/S0828-282X\(09\)70064-9](https://doi.org/10.1016/S0828-282X(09)70064-9)
- Lönnerdal, B. (2017). Development of iron homeostasis in infants and young children. *Am. J. Clin. Nutr.* 106 : 1575S–1580S. Available at: <https://doi.org/10.3945/ajcn.117.155820>
- Maanja, M., Wieslander, B., Schlegel, T.T., Bacharova, L., Abu Daya, H., Fridman, Y., *et al.* (2017). Diffuse Myocardial Fibrosis Reduces Electrocardiographic Voltage Measures of Left Ventricular Hypertrophy Independent of Left Ventricular Mass. *J. Am. Heart Assoc.* 6. Available at: <https://doi.org/10.1161/JAHA.116.003795>
- Marcato, J.P., Senra Santos, F., Gama Palone, A., & Lenci Marques, G. (2022). Evaluation of Different Criteria in the Diagnosis of Left Ventricular Hypertrophy by Electrocardiogram in Comparison With Echocardiogram. *Cureus* 14 : e26376. Available at: <https://doi.org/10.7759/cureus.26376>
- Nienhuis, A.W., & Nathan, D.G. (2012). Pathophysiology and Clinical

Manifestations of the β -Thalassemias. *Cold Spring Harb Perspect Med* 2 : 1–13.

- Noori, N., Mahjoubifard, M., Alavi, S.M., Hosseini, S., Sanati, H., & Mirmesdagh, Y. (2013). Diagnostic value of electrocardiography compared with echocardiography in measuring left ventricular mass index in major thalassemia patients over 10 years of age. *J. Tehran Heart Cent.* 8 : 121–126.
- Olivieri, N.F., Nathan, D.G., MacMillan, J.H., Wayne, A.S., Liu, P.P., McGee, A., *et al.* (1994). Survival in medically treated patients with homozygous beta-thalassemia. *N. Engl. J. Med.* 331 : 574–578. Available at: <https://doi.org/10.1056/NEJM199409013310903>
- Park, M.K., & Salamat, M. (2021). Park's Pediatric Cardiology for Practitioners. pp. 31–49, Philadelphia : Elsevier.
- Peguero, Julio G, Lo Presti, S., Perez, J., Issa, O., Brenes, J.C., & Tolentino, A. (2017). Electrocardiographic Criteria for the Diagnosis of Left Ventricular Hypertrophy. *J. Am. Coll. Cardiol.* 69 : 1694–1703. Available at: <https://doi.org/10.1016/j.jacc.2017.01.037>
- Peguero, Julio G., Saberio, L.P., Jorge, P., Omar, I., C., B.J., & Alfonso, T. (2017). Electrocardiographic Criteria for the Diagnosis of Left Ventricular Hypertrophy. *JACC* 69 : 1694–1703. Available at: <https://doi.org/10.1016/j.jacc.2017.01.037>
- Peng, C.-T., Chang, J.-S., Wu, K.-H., Tsai, C.-H., & Lin, H.-S. (2008). Mechanisms of and obstacles to iron cardiomyopathy in thalassemia. *Front. Biosci.* 13 : 5975–5987. Available at: <https://doi.org/10.2741/3130>
- Pennell, D.J., Udelson, J.E., Arai, A.E., Bozkurt, B., Cohen, A.R., Galanello, R., *et al.* (2013). Cardiovascular Function and Treatment in β -Thalassemia Major. *Circulation* 128 : 281–308. Available at: <https://doi.org/10.1161/CIR.0b013e31829b2be6>
- Porter, J.B., Wood, J.C., & Coates, T.D. (2025). IRON OVERLOAD AND CHELATION, in: AT, T., D, F., & JB, P. (Eds.), *Guidelines for the Management of Transfusion-Dependent β -Thalassaemia (TDT) [Internet]. 5th Edition.* Nicosia, Cyprus : Thalassaemia International Federation.
- Rijnbeek, P.R., van Herpen, G., Kapusta, L., ten Harkel, A.D.J., Witsenburg, M., & Kors, J.A. (2008). Electrocardiographic Criteria for Left Ventricular Hypertrophy in Children. *Pediatr. Cardiol.* 29 : 923–928. Available at: <https://doi.org/10.1007/S00246-008-9235-Y>
- Saito, H., Hayashi, H., Tomita, A., Ohashi, H., Maeda, H., & Naoe, T. (2013). Increasing and decreasing phases of ferritin and hemosiderin iron determined by serum ferritin kinetics. *Nagoya J. Med. Sci.* 75 : 213–223.
- Saito, H., Tomita, A., Ohashi, H., Maeda, H., Hayashi, H., & Naoe, T. (2012). Determination of ferritin and hemosiderin iron in patients with normal iron stores and iron overload by serum ferritin kinetics. *Nagoya J. Med. Sci.* 74 : 39–49.
- Sanchez-Villalobos, M., Blanquer, M., Moraleda, J.M., Salido, E.J., & Perez-Oliva, A.B. (2022). New Insights Into Pathophysiology of β -Thalassemia. *Front. Med.* 9 : 880752. Available at: <https://doi.org/10.3389/fmed.2022.880752>
- Sastroasmoro, S., Saputra, D.R., Madiyono, B., Oesman, I.N., & Putra, S.T. (1995).

- Diagnostic accuracy of electrocardiographic criteria for left ventricular hypertrophy in thalassemia syndrome. *Paediatr. Indones.* 35 : 132–140. Available at: <https://doi.org/10.14238/pi35.5-6.1995.132-40>
- Sinha, M.D., Azukaitis, K., Śladowska-Kozłowska, J., Bårdsen, T., Merkevičius, K., Sletten, I.S.K., *et al.* (2022). Prevalence of left ventricular hypertrophy in children and young people with primary hypertension: Meta-analysis and meta-regression. *Front. Cardiovasc. Med.* 9. Available at: <https://doi.org/10.3389/fcvm.2022.993513>
- Suh, J.K., & Jeon, I.S. (2018). Basic Understanding of Iron Metabolism. *Clin Pediatr Hematol Oncol* 25 : 1–9. Available at: <https://doi.org/https://doi.org/10.15264/cpho.2018.25.1.1>
- Supe-Markovina, K., Nielsen, J.C., Musani, M., Panesar, L.E., & Woroniecki, R.P. (2016). Assessment of Left Ventricular Mass and Hypertrophy by Cardiovascular Magnetic Resonance Imaging in Pediatric Hypertension. *J. Clin. Hypertens. (Greenwich)*. 18 : 976–981. Available at: <https://doi.org/10.1111/jch.12808>
- Sveric, K.M., Cansız, B., Winkler, A., Ulbrich, S., Ende, G., Heidrich, F., *et al.* (2023). Accuracy of Devereaux and Teichholz formulas for left ventricular mass calculation in different geometric patterns: comparison with cardiac magnetic resonance imaging. *Sci. Rep.* 13 : 1–12. Available at: <https://doi.org/10.1038/s41598-023-41020-9>
- Tague, L., Wiggs, J., Li, Q., McCarter, R., Sherwin, E.D., Weinberg, J., *et al.* (2018). Comparison of Left Ventricular Hypertrophy by Electrocardiography and Echocardiography in Children Using Analytics Tool. *Pediatr. Cardiol.* 39 : 1378–1388. Available at: <https://doi.org/10.1007/S00246-018-1907-7>
- Taneera, J., Huwajjah, H.S., Qannita, R., Alalami, A., Dib, A., AlHajji, A., *et al.* (2026). The Association between β -Thalassemia Major (β -TM) and Cardiac Complications: Recent Insights. *Curr. Cardiol. Rev.* 22 : e1573403X376074. Available at: <https://doi.org/10.2174/011573403X376074250630065253>
- Waldvogel-Abramowski, S., Waeber, G., Gassner, C., Buser, A., Frey, B.M., Favrat, B., *et al.* (2014). Physiology of iron metabolism. *Transfus. Med. hemotherapy Off. Organ der Dtsch. Gesellschaft für Transfusionsmedizin und Immunhamatologie* 41 : 213–221. Available at: <https://doi.org/10.1159/000362888>
- Wood, J.C. (2023). Cardiac complications in thalassemia throughout the lifespan: Victories and challenges. *Ann. N. Y. Acad. Sci.* 1530 : 64–73. Available at: <https://doi.org/10.1111/nyas.15078>
- Wood, J.C. (2010). Cardiac Complications in Thalassemia. *Hemoglobin* 33 : 1–6. Available at: <https://doi.org/10.3109/03630260903347526>.CARDIAC
- World Health Organization (2009). Guidelines and Principles for Safe Blood Transfusion Practice, in: *Guidelines and Principles for Safe Blood Transfusion Practice*. pp. 1–94, Geneva : WHO Press.