

DAFTAR PUSTAKA

- Ago, T. and Sadoshima, J., 2006. GDF15, a cardioprotective TGF- β superfamily protein, *Circulation Research* 98 (3):294–297.
- Agoston-Coldea, L., Lupu, S., Hicea, S., Paradis, A. and Mocan, T., 2014. Serum levels of the soluble IL-1 receptor family member ST2 and right ventricular dysfunction, *Biomarkers in Medicine* 8 (1):95–106.
- Ambari, A.M., Setianto, B., Santoso, A., *et al.*, 2020. Angiotensin Converting Enzyme Inhibitors (ACEIs) Decrease the Progression of Cardiac Fibrosis in Rheumatic Heart Disease Through the Inhibition of IL-33/sST2, *Frontiers in Cardiovascular Medicine* 7 (7):1–9.
- Amsallem, M., Sweatt, A.J., Aymami, M.C., *et al.*, 2017. Right Heart End-Systolic Remodeling Index Strongly Predicts Outcomes in Pulmonary Arterial Hypertension, *Circulation: Cardiovascular Imaging* 10 (6):e005771.
- Anderson, J.J., Lau, E.M., Lavender, M., *et al.*, 2020. Retrospective Validation of the REVEAL 2.0 Risk Score With the Australian and New Zealand Pulmonary Hypertension Registry Cohort, *Chest* 157 (1):162–172.
- Azibani, F., Benard, L., Schlossarek, S., *et al.*, 2012. Aldosterone inhibits antifibrotic factors in mouse hypertensive heart, *Hypertension* 59 (6):1179–1187.
- Badano, L.P., Kolias, T.J., Muraru, D., *et al.*, 2018. Standardization of left atrial, right ventricular, and right atrial deformation imaging using two-dimensional speckle tracking echocardiography: A consensus document of the EACVI/ASE/Industry Task Force to standardize deformation imaging, *European Heart Journal Cardiovascular Imaging* 19 (6):591–600.
- Banerjee, D., Haddad, F., Zamanian, R.T. and Nagendran, J., 2010. Right ventricular failure: A novel era of targeted therapy, *Current Heart Failure Reports* 7:202–211.
- Benza, R.L., Miller, D.P., Barst, R.J., Badesch, D.B., Frost, A.E. and McGoon, M.D., 2012. An evaluation of long-term survival from time of diagnosis in pulmonary arterial hypertension from the reveal registry, *Chest* 142 (2):448–456.
- Berezin, A.E., 2018. Emerging Role of Galectin-3 in Pulmonary Artery Hypertension, *Modern Health Science* 1 (1):p35.
- Bernardo, R.J., Haddad, F., Couture, E.J., *et al.*, 2020. Mechanics of right ventricular dysfunction in pulmonary arterial hypertension and heart failure with preserved ejection fraction, *Cardiovascular Diagnosis and Therapy* 10 (5):1580–1603.
- Besler, C., Lang, D., Urban, D., *et al.*, 2017. Plasma and Cardiac Galectin-3 in Patients With Heart Failure Reflects Both Inflammation and Fibrosis: Implications for Its Use as a Biomarker, *Circulation. Heart Failure* 10 (3):003804.
- Bouabdallaoui, N., Claggett, B., Zile, M.R., *et al.*, 2018. Growth differentiation factor-15 is not modified by sacubitril/valsartan and is an independent marker of risk in patients with heart failure and reduced ejection fraction: the PARADIGM-HF trial, *European Journal of Heart Failure* 20 (12):1701–1709.
- Brown, S., Raina, A., Katz, D., Szerlip, M., Chest, S.W., *et al.*, 2011. Longitudinal shortening accounts for the majority of right ventricular contraction and improves after pulmonary vasodilator therapy in normal subjects and patients with, *Chest* 140 (1):27–33.
- Chan, M.M.Y., Santhanakrishnan, R., Chong, J.P.C., *et al.*, 2016. Growth differentiation factor 15 in heart failure with preserved vs. reduced ejection fraction, *European Journal of Heart Failure* 18 (1):81–88.

- Chen, J., Xiao, P., Song, D., Song, D., Chen, Z. and Li, H., 2022. Growth stimulation expressed gene 2 (ST2): Clinical research and application in the cardiovascular related diseases, *Frontiers in Cardiovascular Medicine* 9 (11):1–14.
- Chen, W.S., Cao, Z., Leffler, H., Nilsson, U.J. and Panjwani, N., 2017. Galectin-3 Inhibition by a Small-Molecule Inhibitor Reduces Both Pathological Corneal Neovascularization and Fibrosis, *Investigative Ophthalmology & Visual Science* 58 (1):9–20.
- Chida, A., Sato, H., Shintani, M., *et al.*, 2014. Soluble ST2 and N-terminal pro-brain natriuretic peptide combination: Useful biomarker for predicting outcome of childhood pulmonary arterial hypertension, *Circulation Journal* 78 (2):436–442.
- Chin, K.M., Gaine, S.P., Gerges, C., *et al.*, 2024. Treatment algorithm for pulmonary arterial hypertension, *European Respiratory Journal (In press)* 2401325.
- Chow, S.L., Maisel, A.S., Anand, I., *et al.*, 2017. Role of Biomarkers for the Prevention, Assessment, and Management of Heart Failure: A Scientific Statement From the American Heart Association, *Circulation* 135 (22):e1054–e1091.
- D'Alto, M., Romeo, E., Argiento, P., *et al.*, 2015. Pulmonary arterial hypertension: The key role of echocardiography, *Echocardiography* 32 (S1):23–37.
- Dardi, F., Boucly, A., Benza, R., *et al.*, 2024. Risk stratification and treatment goals in pulmonary arterial hypertension, *European Respiratory Journal (in press)* 2401323.
- Dell'Italia, L.J., 2012. Anatomy and physiology of the right ventricle., *Cardiology Clinics* 30 (2):167–187.
- Dinarti, L.K., Anggrahini, D.W., Lilyasari, O., Siswanto, B.B. and Hartopo, A.B., 2021. Pulmonary arterial hypertension in Indonesia: Current status and local application of international guidelines, *Global Heart* available at : <https://doi.org/10.5334/GH.944>.
- Dinarti, L.K., Hartopo, A.B., Anggrahini, D.W., Sadewa, A.H., Setianto, B.Y. and Wahab, A.S., 2020. Profile of Endothelin-1, Nitric Oxide, and Prostacyclin Levels in Pulmonary Arterial Hypertension Related to Uncorrected Atrial Septal Defect: Results from a Single Center Study in Indonesia, *Cardiology Research and Practice* 20:163.
- Dinarti, L.K., Hartopo, A.B., Kusuma, A.D., *et al.*, 2020. The COngenital HeARt Disease in adult and Pulmonary Hypertension (COHARD-PH) registry: A descriptive study from single-center hospital registry of adult congenital heart disease and pulmonary hypertension in Indonesia, *BMC Cardiovascular Disorders* 20 (1):1–11.
- Drake, J.I., Bogaard, H.J., Mizuno, S., *et al.*, 2011. Molecular signature of a right heart failure program in chronic severe pulmonary hypertension, *Atsjournals.Org* 45 (6):1239–1247.
- Fenster, B.E., Lasalvia, L., Schroeder, J.D., *et al.*, 2016. Galectin-3 levels are associated with right ventricular functional and morphologic changes in pulmonary arterial hypertension, *Heart and Vessels* 31 (6):939–946.
- Fulton, D.J.R., Li, X., Bordan, Z., *et al.*, 2019. Galectin-3: A Harbinger of Reactive Oxygen Species, Fibrosis, and Inflammation in Pulmonary Arterial Hypertension, *Antioxidants and Redox Signaling* 10 November, available at : DOI: 10.1089/ars.2019.7753.
- Galiè, N., McLaughlin, V. V., Rubin, L.J. and Simonneau, G., 2019. An overview of the 6th World Symposium on Pulmonary Hypertension, *European Respiratory Journal*, 53 :1802148.
- Geenen, L.W., Baggen, V.J.M., Kauling, R.M., *et al.*, 2020. Growth differentiation factor-15 as candidate predictor for mortality in adults with pulmonary hypertension, *Heart* 106 (6):467–473.
- Grignola, J.C., 2011. Hemodynamic assessment of pulmonary hypertension, *World Journal of Cardiology* 3 (1):10.

- Grünig, E. and Peacock, A.J., 2015. Imaging the heart in pulmonary hypertension: An update, *European Respiratory Review* 24: 653-644
- Guazzi, M., Bandera, F., Pelissero, G., *et al.*, 2013. Tricuspid annular plane systolic excursion and pulmonary arterial systolic pressure relationship in heart failure: An index of right ventricular contractile function and prognosis, *American Journal of Physiology - Heart and Circulatory Physiology* 305 (9):H1373-H1381.
- Gürgöze, M.T., Van Vark, L.C., Baart, S.J., *et al.*, 2023. Multimarker Analysis of Serially Measured GDF-15, NT-proBNP, ST2, GAL-3, cTnI, Creatinine, and Prognosis in Acute Heart Failure, *Circulation: Heart Failure* 16 (1):E009526.
- Hara, A., Niwa, M., Noguchi, K., *et al.*, 2020a. Galectin-3 as a Next-Generation Biomarker for Detecting Early Stage of Various Diseases, *Biomolecules* 10 (3):389.
- Hartopo, A.B. and Dinarti, L.K., 2018. *The Shared Pathogenesis of Pulmonary Artery Hypertension*, proceedings Jogja Cardiology Update.
- Hemnes, A.R. and Humbert, M., 2017. Pathobiology of pulmonary arterial hypertension: Understanding the roads less travelled, *European Respiratory Review* 26:17.0093.
- Hitzeman, T.C., Xie, Y., Zadikany, R.H., *et al.*, 2020. cBIN1 Score (CS) Identifies Ambulatory HFrEF Patients and Predicts Cardiovascular Events, *Frontiers in Physiology* 111, available at : <https://doi.org/10.3389/FPHYS.2020.00503>.
- Ho, J.E., Liu, C., Lyass, A., *et al.*, 2012. Galectin-3, a Marker of Cardiac Fibrosis, Predicts Incident Heart Failure in the Community, *Journal of the American College of Cardiology* 60 (14):1249–1256.
- Ho, S.Y. and Nihoyannopoulos, P., 2006. Anatomy, echocardiography, and normal right ventricular dimensions, *Heart*, 92(Suppl 1):i2-i13.
- Hoeper, M.M. and Gibbs, J.S.R., 2014. The changing landscape of pulmonary arterial hypertension and implications for patient care, *European Respiratory Review* 1 December, available at : DOI: 10.1183/09059180.00007814.
- Humbert, M., Guignabert, C., Bonnet, S., *et al.*, 2019. Pathology and pathobiology of pulmonary hypertension: State of the art and research perspectives, *European Respiratory Journal* 53: 1801887.
- Humbert, M., Kovacs, G., Hoeper, M.M., *et al.*, 2023. 2022 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension, *European Respiratory Journal* in press: 2200879.
- Izumiya, Y., Hanatani, S., Kimura, Y., *et al.*, 2014. Growth differentiation factor-15 is a useful prognostic marker in patients with heart failure with preserved ejection fraction, *Canadian Journal of Cardiology* 30 (3):338–344.
- Kempf, T., von Haehling, S., Peter, T., *et al.*, 2007. Prognostic Utility of Growth Differentiation Factor-15 in Patients With Chronic Heart Failure, *Journal of the American College of Cardiology* 50 (11):1054–1060.
- Keranov, S., Dörr, O., Jafari, L., *et al.*, 2021. Osteopontin and galectin-3 as biomarkers of maladaptive right ventricular remodeling in pulmonary hypertension, *Biomarkers in Medicine* 15 (12):1021–1034.
- Keranov, S., Widmann, L., Jafari, L., *et al.*, 2022. GDF-15 and soluble ST2 as biomarkers of right ventricular dysfunction in pulmonary hypertension, *Biomarkers in Medicine* 16 (17):1193–1207.
- Kercheva, M., Ryabova, T., Gusakova, A., Suslova, T.E., Ryabov, V. and Karpov, R.S., 2019. Serum Soluble ST2 and Adverse Left Ventricular Remodeling in Patients With ST-Segment Elevation Myocardial Infarction, *Clinical Medicine Insights. Cardiology* 13:1-8.
- Kim, K.K., Wei, Y., Szekeres, C., *et al.*, 2009. Epithelial cell $\alpha 3\beta 1$ integrin links β -catenin and Smad signaling to promote myofibroblast formation and pulmonary fibrosis, *The*

- (19-215-221).
- Kossaiyf, A., 2015. Echocardiographic assessment of the right ventricle, from the conventional approach to speckle tracking and three-dimensional imaging, and insights into the “Right Way” to explore the forgotten chamber, *Clinical Medicine Insights: Cardiology* 965–75.
- Kriechbaum, S.D., Wiedenroth, C.B., Peters, K., *et al.*, 2020. Galectin-3, GDF-15, and sST2 for the assessment of disease severity and therapy response in patients suffering from inoperable chronic thromboembolic pulmonary hypertension, *Biomarkers* 25 (7):578–586.
- Lang, R.M., Badano, L.P., Victor, M.A., *et al.*, 2015. Recommendations for cardiac chamber quantification by echocardiography in adults: An update from the American Society of Echocardiography and the European Association of Cardiovascular Imaging, *Journal of the American Society of Echocardiography* 28 (1):1-39.e14.
- Leopold, J.A. and Maron, B.A., 2016. Molecular mechanisms of pulmonary vascular remodeling in pulmonary arterial hypertension, *International Journal of Molecular Sciences* 17:761.
- Li, G., Li, Y., Tan, X. qiu, *et al.*, 2017. Plasma Growth Differentiation Factor-15 is a Potential Biomarker for Pediatric Pulmonary Arterial Hypertension Associated with Congenital Heart Disease, *Pediatric Cardiology* 38 (8):1620–1626.
- Li, H., Tago, K., Io, K., *et al.*, 2000. The cloning and nucleotide sequence of human ST2L cDNA., *Genomics* 67 (3):284–290.
- Li, L.C., Li, J. and Gao, J., 2014. Functions of galectin-3 and its role in fibrotic diseases, *Journal of Pharmacology and Experimental Therapeutics* 351 (2):336–343.
- Li, T., Zha, L., Luo, H., *et al.*, 2019. Galectin-3 mediates endothelial-to-mesenchymal transition in pulmonary arterial hypertension, *Aging and Disease* 10 (4):731–745.
- Lin, Y.H., Chou, C.H., Wu, X.M., *et al.*, 2014. Aldosterone Induced Galectin-3 Secretion In Vitro and In Vivo: From Cells to Humans, *PLOS ONE* 9 (9):e95254.
- Liu, F.T., Patterson, R.J. and Wang, J.L., 2002. Intracellular functions of galectins, *Biochimica et Biophysica Acta (BBA) - General Subjects* 1572 (2–3):263–273.
- Liu, J., Wang, W., Wang, L., *et al.*, 2018. IL-33 Initiates Vascular Remodelling in Hypoxic Pulmonary Hypertension by up-Regulating HIF-1 α and VEGF Expression in Vascular Endothelial Cells., *EBioMedicine* 33196–210.
- Llucià-Valdeperas, A., de Man, F.S. and Bogaard, H.J., 2021. Adaptation and Maladaptation of the Right Ventricle in Pulmonary Vascular Diseases, *Clinics in Chest Medicine* 42:179-194.
- Lok, D.J., Klip, Ij.T., Lok, S.I., *et al.*, 2013. Incremental Prognostic Power of Novel Biomarkers (Growth-Differentiation Factor-15, High-Sensitivity C-Reactive Protein, Galectin-3, and High-Sensitivity Troponin-T) in Patients With Advanced Chronic Heart Failure, *The American Journal of Cardiology* 112 (6):831–837.
- Lyu, L., Xu, J., Xv, C., *et al.*, 2024. Prognostic value of growth differentiation factor-15 in heart failure among whole ejection fraction phenotypes, *ESC Heart Failure* 11 (4):2295–2304.
- Maimaiti, Y., Cheng, H., Guo, Z., Yu, X., Tuohuti, A. and Li, G., 2023. Correlation between serum GDF-15 level and pulmonary vascular morphological changes and prognosis in patients with pulmonary arterial hypertension, *Frontiers in Cardiovascular Medicine* 10:1085122.
- Marzullo, A., Ambrosi, F., Inchingolo, M., *et al.*, 2016. ST2L Transmembrane Receptor Expression: An Immunochemical Study on Endarterectomy Samples, *PLOS ONE* Public Library of Science 11 (5):e0156315.

- May, B.M., Pimentel, M., Zimmerman, L.I. and Rohde, L.E., 2021. GDF-15 as a biomarker in cardiovascular disease, *Arquivos Brasileiros de Cardiologia* 116(3):494-500.
- Mazor Dray, E. and Marelli, A.J., 2015. Adult Congenital Heart Disease: Scope of the Problem, *Cardiology Clinics* 33 (4):503–512.
- Mazurek, J.A., Horne, B.D., Saeed, W., Sardar, M.R. and Zolty, R., 2017. Galectin-3 Levels Are Elevated and Predictive of Mortality in Pulmonary Hypertension, *Heart Lung and Circulation* 26 (11):1208–1215.
- McCarthy, B.E., McClelland, R.L., Appleby, D.H., *et al.*, 2022. BMI and Treatment Response in Patients With Pulmonary Arterial Hypertension: A Meta-analysis, *Chest*, 162;436–447.
- Mildner, M., Storka, A., Lichtenauer, M., *et al.*, 2010. Primary sources and immunological prerequisites for sST2 secretion in humans., *Cardiovascular Research* 87 (4):769–777.
- Muraru, D., Badano, L.P., Nagata, Y., *et al.*, 2020. Development and prognostic validation of partition values to grade right ventricular dysfunction severity using 3D echocardiography, *European Heart Journal Cardiovascular Imaging* 21 (1):10–21.
- Naeije, R., and Badagliacca R, 2017. The overloaded right heart and ventricular interdependence, *Cardiovascular Research* 116(3):494-500.
- Nickel, N., Jonigk, D., Kempf, T., *et al.*, 2011. GDF-15 is abundantly expressed in plexiform lesions in patients with pulmonary arterial hypertension and affects proliferation and apoptosis of pulmonary endothelial cells., *Respiratory Research* 12 (1):62.
- Nickel, N., Kempf, T., Tapken, H., *et al.*, 2008. Growth differentiation factor-15 in idiopathic pulmonary arterial hypertension, *American Journal of Respiratory and Critical Care Medicine* 178 (5):534–541.
- Noordegraaf, A.V., Chin, K.M., Haddad, F., *et al.*, 2019. Pathophysiology of the right ventricle and of the pulmonary circulation in pulmonary hypertension: An update, *European Respiratory Journal*, 53:01900.
- Otaki, Y., Shimizu, M., Watanabe, T., *et al.*, 2023. Growth Differentiation Factor 15 and Clinical Outcomes in Japanese Patients With Heart Failure, *Circulation Journal* 87 (8):1120–1129.
- Park, J.H., Kusunose, K., Kwon, D.H., *et al.*, 2015. Relationship between right ventricular longitudinal strain, invasive hemodynamics, and functional assessment in pulmonary arterial hypertension, *Korean Circulation Journal* 45 (5):398–407.
- Pham, T.T. and Nguyen, H.T.T., 2022. Global and Regional Right Ventricular Function Investigation by 2D Speckle Tracking Echocardiography in Congenital Heart Disease Patients With Pulmonary Arterial Hypertension, *Cardiovascular Imaging Asia* 6 (2):41.
- Pratama, R.S., Hartopo, A.B., Anggrahini, D.W., Dewanto, V.C. and Dinarti, L.K., 2020a. Serum soluble suppression of tumorigenicity-2 level associates with severity of pulmonary hypertension associated with uncorrected atrial septal defect., *Pulmonary Circulation* 10 (2):2045894020915832.
- Pratama, R.S., Hartopo, A.B., Anggrahini, D.W., Dewanto, V.C. and Dinarti, L.K., 2020b. Serum soluble suppression of tumorigenicity-2 level associates with severity of pulmonary hypertension associated with uncorrected atrial septal defect, *Pulmonary Circulation* 10 (2):1-8.
- Prisco, S.Z., Thenappan, T. and Prins, K.W., 2020. Treatment Targets for Right Ventricular Dysfunction in Pulmonary Arterial Hypertension, *JACC: Basic to Translational Science* 5(12):1244-60.

- Pugh, M.E. and Hemnes, A.R., 2010. Development of pulmonary arterial hypertension in women: Interplay of sex hormones and pulmonary vascular disease, *Women's Health* 8(11): 1549–1558.
- Qian, J., Ding, Y., Yang, X., *et al.*, 2023. The diagnostic and prognostic value of growth differentiation factor-15 in systemic lupus erythematosus-associated pulmonary arterial hypertension, *Pulmonary Circulation* 13 (1):e12195.
- Rabkin, S.W. and Tang, J.K.K., 2021. The utility of growth differentiation factor-15, galectin-3, and sST2 as biomarkers for the diagnosis of heart failure with preserved ejection fraction and compared to heart failure with reduced ejection fraction: a systematic review, *Heart Failure Reviews* 26:799–812.
- Rafikova, O., Rafikov, R., Meadows, M.L., Kangath, A., Jonigk, D. and Black, S.M., 2015. The sexual dimorphism associated with pulmonary hypertension corresponds to a fibrotic phenotype, *Pulmonary Circulation* 5 (1):184–197.
- Rajagopal, S. and Yu, Y.R.A., 2022. The Pathobiology of Pulmonary Arterial Hypertension, *Cardiology Clinics* 40 (2022) 1–12.
- Sahin A, K.H.G.I., 2020. Relationship between sST2 levels and prognosis in patients with pulmonary arterial hypertension, *Annals of Clinical and Analytical Medicine* 11 (Suppl 3): S172-177.
- Roberts, J.D. and Forfia, P.R., 2011. Diagnosis and assessment of pulmonary vascular disease by doppler echocardiography, *Pulmonary Circulation* 1 (2):160-181.
- Rudski, L.G., Lai, W.W., Afilalo, J., *et al.*, 2010. Guidelines for the Echocardiographic Assessment of the Right Heart in Adults: A Report from the American Society of Echocardiography. Endorsed by the European Association of Echocardiography, a registered branch of the European Society of Cardiology, and the Canadian Society of Echocardiography, *Journal of the American Society of Echocardiography* 23 (7):685–713.
- Ryan, J.J. and Archer, S.L., 2014. The right ventricle in pulmonary arterial hypertension: Disorders of metabolism, angiogenesis and adrenergic signaling in right ventricular failure, *Circulation Research* 115 (1):176–188.
- Ryo, K., Goda, A., Onishi, T., *et al.*, 2015. Characterization of Right Ventricular Remodeling in Pulmonary Hypertension Associated with Patient Outcomes by 3-Dimensional Wall Motion Tracking Echocardiography, *Circulation: Cardiovascular Imaging* 8 (6): 8:e003176.
- Sanada, S., Hakuno, D., Higgins, L.J., Schreiter, E.R., McKenzie, A.N.J. and Lee, R.T., 2007a. IL-33 and ST2 comprise a critical biomechanically induced and cardioprotective signaling system, *Journal of Clinical Investigation* 117 (6):1538.
- Scelsi, L., Ghio, S., Matrone, B., *et al.*, 2020. Galectin-3 plasma levels are associated with risk profiles in pulmonary arterial hypertension, *Diagnostics* 10 (11):857.
- Sengupta, P.P. and Narula, J., 2013. RV form and function: A piston pump, vortex impeller, or hydraulic ram?, *JACC: Cardiovascular Imaging* 6 (5):636–639.
- Slack, R.J., Mills, R. and Mackinnon, A.C., 2021a. The therapeutic potential of galectin-3 inhibition in fibrotic disease, *The International Journal of Biochemistry & Cell Biology* 130105881.
- Slack, R.J., Mills, R. and Mackinnon, A.C., 2021b. The therapeutic potential of galectin-3 inhibition in fibrotic disease, *International Journal of Biochemistry and Cell Biology* 130: 105881.
- Soliman-Aboumari, H., Joshi, S.S., Cameli, M., *et al.*, 2022. EACVI survey on the multi-modality imaging assessment of the right heart, *European Heart Journal Cardiovascular Imaging* 23 (11):1417–1422.
- Sommer, N., Ghofrani, H.A., Pak, O., *et al.*, 2020. Current and future treatments of pulmonary arterial hypertension, *British Journal of Pharmacology* 178:6–30.

- Stenmark, K.R., Frid, M. and Perros, F., 2016. Endothelial-to-Mesenchymal transition: An evolving paradigm and a promising therapeutic target in PAH, *Circulation* 133:1734-1737.
- Suthahar, N., Meijers, W.C., Silljé, H.H.W., Ho, J.E., Liu, F.T. and de Boer, R.A., 2018. Galectin-3 activation and inhibition in heart failure and cardiovascular disease: An update, *Theranostics* 8(3): 593-609.
- Thayer, T.E., Levinson, R.T., Huang, S., *et al.*, 2021. BMI Is Causally Associated With Pulmonary Artery Pressure But Not Hemodynamic Evidence of Pulmonary Vascular Remodeling, *Chest* 159 (1):302–310.
- Tominaga, S. ichi, 1989. A putative protein of a growth specific cDNA from BALB/c-3T3 cells is highly similar to the extracellular portion of mouse interleukin 1 receptor, *FEBS Letters* 258 (2):301–304.
- Van de Veerdonk, M.C., Huis in t Veld, A.E., Marcus, J.T., *et al.*, 2017. Upfront combination therapy reduces right ventricular volumes in pulmonary arterial hypertension, *European Respiratory Journal* 49 (6):170000
- Ventetuolo, C.E., Ouyang, P., Bluemke, D.A., *et al.*, 2011. Sex hormones are associated with right ventricular structure and function: the MESA-right ventricle study, *Atsjournals.Org* 183 (5):659–667.
- Vértes, V., Porpáczy, A., Nógrádi, Á., *et al.*, 2022. Galectin-3 and sST2: associations to the echocardiographic markers of the myocardial mechanics in systemic sclerosis – a pilot study, *Cardiovascular Ultrasound* 20 (1).
- Vonk Noordegraaf, A., Westerhof, B.E. and Westerhof, N., 2017. The Relationship Between the Right Ventricle and its Load in Pulmonary Hypertension, *Journal of the American College of Cardiology* 69 (2):236–243.
- Vonk-Noordegraaf, A., Haddad, F., Chin, K.M., *et al.*, 2013. Right heart adaptation to pulmonary arterial hypertension: Physiology and pathobiology, *Journal of the American College of Cardiology*, 62 (25):D22-33.
- Wollert, K.C., Kempf, T. and Wallentin, L., 2017. Growth differentiation factor 15 as a biomarker in cardiovascular disease, *Clinical Chemistry* 63(1):140-151.
- Zheng, Y.-G., Yang, T., He, J.-G., *et al.*, 2014. Plasma soluble ST2 levels correlate with disease severity and predict clinical worsening in patients with pulmonary arterial hypertension., *Clinical Cardiology* 37 (6):365–370.

