

DAFTAR PUSTAKA

- Abraham, W.T., Ponikowski, P., Brueckmann, M., Zeller, C., Maccesic, H., Peil, B., Brun, M., Ustyugova, A., Jamal, W., Salsali, A., Lindenfeld, J., Anker, S.D., Investigators, E., 2019. Rationale and design of the EMPERIAL- Preserved and EMPERIAL-Reduced trials of empagliflozin in patients with chronic heart failure. *Eur. J. Hear. Fail.* 03448406: 932–942. doi:10.1002/ejhf.1486
- Al-badri, A., Hashmath, Z., Oldland, G.H., Miller, R., Javaid, K., Syed, A.A., Ansari, B., Gaddam, S., 2019. Poor Glycemic Control Is Associated With Increased Extracellular Volume Fraction in Diabetes 41: 2019–2025. doi:10.2337/dc18-0324
- Altara, R., Giordano, M., Norden, E.S., Cataliotti, A., Kurdi, M., Bajestani, S.N., Booz, G.W., 2017. Targeting Obesity and Diabetes to Treat Heart Failure with Preserved ejection Fraction. *Front. Endocrinol. (Lausanne)*. 8: 1–13. doi:10.3389/fendo.2017.00160
- Amario, D.D., 2019. Microvascular Dysfunction in Heart Failure With Preserved Ejection Fraction 10. doi:10.3389/fphys.2019.01347
- Andersen, O., Smiseth, O., Dokainish, H., Abudiab, M., Schutt, R., Kumar, A., Sato, K., Harb, S., Klein, A., Nagueh, S., 2018. Estimating Left Ventricular Filling Pressure by Echocardiography. *J. Am. Coll. Cardiol.* 69. doi:10.1016/j.jacc.2017.01.058
- Ansary, T.M., Nakano, D., Nishiyama, A., 2019. Diuretic effects of sodium glucose cotransporter 2 inhibitors and their influence on the renin-angiotensin system. *Int. J. Mol. Sci.* 20. doi:10.3390/ijms20030629
- Aoki, Y., Shimizu, M., Watanabe, N., 2013. The Blood Glucose Level Increased in Parallel with the Heart Rate Following Cilostazol Administration in Three Diabetic Patients 859–863. doi:10.2169/internalmedicine.53.1403
- Bancks, M.P., Carson, A.P., Lewis, C.E., Gunderson, E.P., Reis, J.P., Schreiner,

- P.J., Yano, Y., Carnethon, M.R., 2019. Fasting glucose variability in young adulthood and incident diabetes, cardiovascular disease and all-cause mortality. *Diabetologia* 68: 1366–1374. doi:10.1007/s00125-019-4901-6. Fasting
- Bizino, M.B., Jazet, I.M., Westenberg, J.J.M., Eyk, H.J. Van, Paiman, E.H.M., Smit, J.W.A., Lamb, H.J., 2019. Effect of liraglutide on cardiac function in patients with type 2 diabetes mellitus : randomized placebo - controlled trial. *Cardiovasc. Diabetol.* 1–12. doi:10.1186/s12933-019-0857-6
- Bouthoorn, S., Valstar, G.B., Gohar, A., den Ruijter, H.M., Reitsma, H.B., Hoes, A.W., Rutten, F.H., 2018. The prevalence of left ventricular diastolic dysfunction and heart failure with preserved ejection fraction in men and women with type 2 diabetes: A systematic review and meta-analysis. *Diabetes Vasc. Dis. Res.* 15: 477–493. doi:10.1177/1479164118787415
- Bursi, F., Weston, S.A., Redfield, M.M., Jacobsen, S.J., Pakhomov, S., Nkomo, V.T., Ryan A. Meverden, Roger, V.L., 2017. Systolic and Diastolic Heart Failure. *Emerg. Med. Rep.* 38: 141–155.
- Campbell, P., Krim, S., Ventura, H., 2015. The Bi-directional Impact of Two Chronic Illnesses: Heart Failure and Diabetes: A review of the Epidemiology and Outcomes. *Card. Fail. Rev.* 1: 8. doi:10.15420/cfr.2015.01.01.8
- Carbone, S., Canada, J.M., Billingsley, H.E., Elagizi, A., Lavie, C.J., 2019. Obesity paradox in cardiovascular disease : where do we stand ? 89–100.
- Cardoso, C.R.L., Leite, N.C., Moram, C.B.M., Salles, G.F., 2018. Long - term visit - to - visit glycemic variability as predictor of micro - and macrovascular complications in patients with type 2 diabetes : The Rio de Janeiro Type 2 Diabetes Cohort Study. *Cardiovasc. Diabetol.* 1–16. doi:10.1186/s12933-018-0677-0
- Carnes, J., Gordon, G., Mmed, M., 2019. Biomarkers in Heart Failure With Preserved Ejection Fraction : An Update on Progress and Future Challenges Biomarkers in Heart Failure With. *Hear. Lung Circ.* 1–7.

doi:10.1016/j.hlc.2019.05.180

- Catargi, B., Darier, R., Montaudon, M., Beauvieux, M.C., Coffin-Boutreux, C., Coste, P., Douard, H., Ouattara, A., Gerbaud, E., 2019. Glycemic variability is a powerful independent predictive factor of midterm major adverse cardiac events in patients with diabetes with acute coronary syndrome. *Diabetes care* 2019;42:674-681. *Diabetes Care* 42: E170–E171. doi:10.2337/dci19-0033
- Ceriello, A., Monnier, L., Owens, D., 2018. Review Glycaemic variability in diabetes : clinical and therapeutic implications. *LANCET Diabetes Endocrinol.* 8587. doi:10.1016/S2213-8587(18)30136-0
- Chan, Y., Tuttle, C., Ball, J., Teng, T.K., Ahamed, Y., Carrington, M.J., Stewart, S., 2016. Current and projected burden of heart failure in the Australian adult population : a substantive but still ill-defined major health issue 1–10. doi:10.1186/s12913-016-1748-0
- Chehregosha, H., Khamseh, M.E., Malek, M., 2019. A View Beyond HbA1c : Role of Continuous Glucose Monitoring. *Diabetes Ther.* 10: 853–863. doi:10.1007/s13300-019-0619-1
- Chon, S., Lee, Y.J., Fraterrigo, G., Pozalli, P., Choi, M.C., Kwon, M.-K., Chin, S.O., Kim, Y.-S., Woo, J.-T., 2013. Evaluation of Glycemic Variability in Well-Controlled. *Diabetes Technol. Ther.* 15. doi:10.1089/dia.2012.0315
- Chung, E.S., Packer, M., Lo, K.H., Fasanmade, A.A., Willerson, J.T., 2003. Randomized, Double-Blind, Placebo-Controlled, Pilot Trial of Infliximab, a Chimeric Monoclonal Antibody to Tumor Necrosis Factor, in Patients With Moderate-to-Severe Heart Failure Results. *Circulation* 3133–3140. doi:10.1161/01.CIR.0000077913.60364.D2
- Devries, J.H., 2013. Glucose Variability: Where It Is Important and How to Measure It 62: 1405–1408. doi:10.2337/db12-1610
- Dhatariya, K.K., Li, E., Sin, P.W., Oi, J., Cheng, S., Yan, F., Li, N., Wei, A., Yue, Y., Gooday, C., Nunnery, I., 2017. The impact of glycaemic variability on

wound healing in the diabetic foot – A retrospective study of new ulcers presenting to a specialist multidisciplinary foot clinic. *Diabetes Res. Clin. Pract.* 135: 23–29. doi:10.1016/j.diabres.2017.10.022

Drucker, D.J., 2016. The Cardiovascular Biology of Glucagon-like Peptide-1. *Cell Metab.* 24: 15–30. doi:10.1016/j.cmet.2016.06.009

Dunlay, S.M., Givertz, M.M., Aguilar, D., Allen, L.A., Chan, M., Desai, A.S., Deswal, A., Dickson, V.V., Kosiborod, M.N., Lekavich, C.L., McCoy, R.G., Mentz, R.J., Piña, I.L., 2019. Type 2 diabetes mellitus and heart failure a scientific statement from the American Heart Association and the Heart Failure Society of America, *Circulation*. doi:10.1161/CIR.0000000000000691

Elsanhoury, A., Nelki, V., Kelle, S., Linthout, S. Van, 2021. Epicardial Fat Expansion in Diabetic and Obese Patients With Heart Failure and Preserved Ejection Fraction — A Specific HFpEF Phenotype 8: 1–11. doi:10.3389/fcvm.2021.720690

Færch, K., 2018. Relative contributions of preprandial and postprandial glucose exposures , glycemic variability , and non-glycemic factors to HbA 1c in individuals with and without diabetes. *Nutr. Diabetes* 0–8. doi:10.1038/s41387-018-0047-8

Færch, K., Vaduganathan, M., Caughey, M.C., Butler, J., Fonarow, G.C., Grodin, J.L., McGuire, D.K., Pandey, A., Sartore, G., Cristiano, N., Yokota, S., Tanaka, H., Mochizuki, Y., Soga, F., Yamashita, K., Matsumoto, K., Hirota, Y., Ogawa, W., Hirata, K., Care, I., Chao, W.C., Tseng, C.H., Wu, C.L., Shih, S.J., Yi, C.Y., Review, J.S., Peyser, T.A., Balo, A.K., Buckingham, B.A., Hirsch, I.B., Garcia, A., Zhou, Z., Sun, B., Huang, S., Zhu, C., Bian, M., Taylor, P.J., Lange, K., Thompson, C.H., Gary, W., Grant, D., Wachter, R., Shah, S.J., Cowie, M.R., Szecsödy, P., Shi, V., Ibram, G., Gong, J., Klebs, S., Pieske, B., Edelmann, F., Wachter, R., Schmidt, A.G., Kraigher-kraimer, E., Colantonio, C., Durstewitz, K., Lo, M., Du, H., Gu, J., Fan, Y., Zhang, J., Wang, C., 2020. ScienceDirect Association of hemoglobin A1c variability and

the incidence of heart failure with preserved ejection fraction in patients with type 2 diabetes mellitus and arterial hypertension. *Cardiovasc. Diabetol.* 20: 1–9. doi:10.1016/j.hjc.2017.08.001

Fernandes, S.L., Carvalho, R.R., Santos, L.G., Sá, F.M., Ruivo, C., Mendes, S.L., Martins, H., Morais, J.A., 2019. Review Article Pathophysiology and Treatment of Heart Failure with Preserved Ejection Fraction : State of the Art and Prospects for the Future 120–129.

Fraser, A.G., Buser, P.T., Bax, J.J., Dassen, W.R., Nihoyannopoulos, P., Schwitter, J., Knuuti, J.M., 2006. The future of cardiovascular imaging and non-invasive diagnosis: A joint statement from the European Association of Echocardiography , the Working Groups on Cardiovascular Magnetic Resonance, Computers in Cardiology, and Nuclear Cardiology 27: 268–273. doi:10.1093/eurheartj/ehl031

Gallagher, E.J., Le Roith, D., Bloomgarden, Z., 2009. Review of hemoglobin A(1c) in the management of diabetes. *J. Diabetes* 1: 9–17. doi:10.1111/j.1753-0407.2009.00009.x

Gerbaud, E., Darier, R., Montaudon, M., Beauvieux, M.C., Coffin-Boutreux, C., Coste, P., Douard, H., Ouattara, A., Catargi, B., 2019. Glycemic variability is a powerful independent predictive factor of midterm major adverse cardiac events in patients with diabetes with acute coronary syndrome. *Diabetes Care* 42: 674–681. doi:10.2337/dc18-2047

Gopal, K., Chahade, J.J., Kim, R., Ussher, J.R., 2020. The Impact of Antidiabetic Therapies on Diastolic Dysfunction and Diabetic Cardiomyopathy 11: 1–18. doi:10.3389/fphys.2020.603247

Gorst, C., Kwok, C.S., Aslam, S., Buchan, I., Kontopantelis, E., Myint, P.K., Heatlie, G., Loke, Y., Rutter, M.K., 2015. Long-term Glycemic Variability and Risk of Adverse Outcomes : A Systematic Review and. *Diabetes Care* 38: 2354–2369. doi:10.2337/dc15-1188

Grandi, A.M., Piantanida, E., Franzetti, I., Bernasconi, M., Maresca, A., Marnini,

- P., Guasti, L., Venco, A., 2006. Effect of Glycemic Control on Left Ventricular Diastolic Function in Type 1 Diabetes Mellitus. *Am. J. Cardiol.* 97: 71–76. doi:10.1016/j.amjcard.2005.07.110
- Grigorescu, E.D., Lacatusu, C.M., Floria, M., Mihai, B.M., Cretu, I., Sorodoc, L., 2019. Left ventricular diastolic dysfunction in type 2 diabetes—progress and perspectives. *Diagnostics* 9. doi:10.3390/diagnostics9030121
- Grundy, S.M., Cleeman, J.I., Daniels, S.R., Donato, K.A., Eckel, R.H., Franklin, B.A., Gordon, D.J., Krauss, R.M., Savage, P.J., Smith, S.C., Spertus, J.A., Costa, F., 2005. Diagnosis and management of the metabolic syndrome: An American Heart Association/National Heart, Lung, and Blood Institute scientific statement. *Circulation* 112: 2735–2752. doi:10.1161/CIRCULATIONAHA.105.169404
- Gu, J., Pan, J. an, Fan, Y. qi, Zhang, H. li, Zhang, J. feng, Wang, C. qian, 2018. Prognostic impact of HbA1c variability on long-term outcomes in patients with heart failure and type 2 diabetes mellitus. *Cardiovasc. Diabetol.* 17: 1–11. doi:10.1186/s12933-018-0739-3
- Gu, J., Yin, Z., Zhang, J., Wang, C., 2019. Association between long-term prescription of metformin and the progression of heart failure with preserved ejection fraction in patients with type 2 diabetes mellitus and hypertension Jun. *Int. J. Cardiol.* doi:10.1016/j.ijcard.2019.11.087
- Gude, F., Díaz-vidal, P., Rúa-pérez, C., Alonso-sampedro, M., Fernández-merino, C., Rey-garcía, J., Cadarso-suárez, C., Pazos-couselo, M., García-lópez, J.M., Gonzalez-quintela, A., 2016. Glycemic Variability and Its Association With Demographics and Lifestyles in a General Adult Population. doi:10.1177/1932296816682031
- Hamdani, N., Hervent, A., Vandekerckhove, L., Matheeußen, V., Demolder, M., Baerts, L., Meester, I. De, Linke, W.A., Paulus, W.J., Keulenaer, G.W. De, 2014. Left ventricular diastolic dysfunction and myocardial stiffness in diabetic mice is attenuated by inhibition of dipeptidyl peptidase 4 4: 423–431.

doi:10.1093/cvr/cvu223

Hietala, K., Wadén, J., Forsblom, C., Harjutsalo, V., 2013. HbA 1c variability is associated with an increased risk of retinopathy requiring laser treatment in type 1 diabetes 737–745. doi:10.1007/s00125-012-2816-6

Hirakawa, Y., Arima, H., Zoungas, S., Ninomiya, T., Cooper, M., Hamet, P., Mancia, G., Poulter, N., Harrap, S., Woodward, M., Chalmers, J., 2014. Impact of Visit-to-Visit Glycemic Variability on the Risks of Macrovascular and Microvascular Events and All-Cause Mortality in Type 2 Diabetes: The ADVANCE 1–7. doi:10.2337/dc14-0199

Ho, K.K.L., Pinsky, J.L., Kannel, W.B., Levy, D., 1993. The epidemiology of heart failure: The Framingham Study. *J. Am. Coll. Cardiol.* 22. doi:10.1016/0735-1097(93)90455-A

Hossam, M., Ahmed, A.A., Zayat, E., 2019. Echocardiographic parameters differentiating heart failure with preserved ejection fraction from asymptomatic left ventricular diastolic dysfunction 1–6. doi:10.1111/echo.14579

Iribarren, C., Karter, A.J., Go, A.S., Ferrara, A., Liu, J.Y., Sidney, S., Selby, J. V., 2001. Clinical Investigation and Reports Glycemic Control and Heart Failure Among Adult Patients With Diabetes. *Circulation* 2668–2673.

Jang, S., Ogunmoroti, O., Ndumele, C.E., Zhao, D., Rao, V.N., Fashanu, O.E., Tibuakuu, M., Otvos, J.D., Benson, E., Ouyang, P., Michos, E.D., 2020. Association of the Novel Inflammatory Marker. *Circ. Hear. Fail.* 251–260. doi:10.1161/CIRCHEARTFAILURE.120.007067

Jia, G., Hill, M.A., Sowers, J.R., 2018. Diabetic Cardiomyopathy: An Update of Mechanisms Contributing to This Clinical Entity 624–638. doi:10.1161/CIRCRESAHA.117.311586

Jude, E.B., Nixon, M., Leary, C.O., Myland, M., 2019. Evaluating Glycemic Control in Patients with Type 2 Diabetes Suboptimally Controlled on Basal

Insulin : UK ATTAIN Real-World Study. *Diabetes Ther.* 10: 1847–1858.
doi:10.1007/s13300-019-0667-6

Julián, M.T., Alonso, N., Lupón, J., Bovadilla, G.G., Ferrer, E., Antonio, M. De, Ayerbe, J.L., Domingo, M., Vacas, E.S., Zamora, E., Codina, P., Moliner, P., Núñez, J., Santesmases, J., Domingo, M.P., Genis, A.B., 2020. Long - term LVEF trajectories in patients with type 2 diabetes and heart failure : diabetic cardiomyopathy may underlie functional decline. *Cardiovasc. Diabetol.* 1–11.
doi:10.1186/s12933-020-01011-w

Kane, G.C., Karon, B.L., Mahoney, D.W., Redfield, M.M., Roger, V.L., Jr, J.C.B., Jacobsen, S.J., 2011. Progression of Left Ventricular Diastolic Dysfunction and Risk of Heart Failure 55905.

Kenchiah, S., Pocock, S.J., Wang, D., Finn, P. V, Zornoff, L.A.M., Skali, H., Pfeffer, M.A., Yusuf, S., Swedberg, K., Michelson, E.L., Granger, C.B., McMurray, J.J. V, Solomon, S.D., 2007. Chronic Heart Failure Insights From the Candesartan in Heart failure : Assessment of Reduction in Mortality and morbidity (CHARM) Program. *Circulation* 116: 627–636.
doi:10.1161/CIRCULATIONAHA.106.679779

Kenny, H.C., Abel, E.D., 2019. Heart Failure in Type 2 Diabetes Mellitus: Impact of Glucose-Lowering Agents, Heart Failure Therapies, and Novel Therapeutic Strategies. *Circ. Res.* 124: 121–141. doi:10.1161/CIRCRESAHA.118.311371

Kilanowska, A., Zi, A., 2020. Role of Phosphodiesterase in the Biology and Pathology of Diabetes.

Kilpatrick, E.S., Rigby, A.S., Atkin, S.L., 2008. A1C variability and the risk of microvascular complications in type 1 diabetes: Data from the diabetes control and complications trial. *Diabetes Care* 31: 2198–2202. doi:10.2337/dc08-0864

King, M., Kingery, J., Casey, B., 2012. Diagnosis and evaluation of heart failure. *Am. Fam. Physician* 85: 1161–1168.

- Kota, S., Modi, K., Satya Krishna, S., 2013. Glycemic variability: Clinical implications. *Indian J. Endocrinol. Metab.* 17: 611. doi:10.4103/2230-8210.113751
- Kozakova, M., Morizzo, C., Fraser, A.G., Palombo, C., 2017. Impact of glycemic control on aortic stiffness , left ventricular mass and diastolic longitudinal function in type 2 diabetes mellitus. *Cardiovasc. Diabetol.* 1–10. doi:10.1186/s12933-017-0557-z
- Kozakova, M., Morizzo, C., Fraser, A.G., Palombo, C., Marwick, T.H., Cooper, M.E., 2016. Separating the Contributors to Left Ventricular Dysfunction. *Cardiovasc. Diabetol.* 16: 1–3. doi:10.1016/j.jacc.2014.10.044.6.
- Lachin, J.M., Bebu, I., Bergenstal, R.M., Pop-busui, R., Service, F.J., Zinman, B., Nathan, D.M., 2017. Association of Glycemic Variability in Type 1 Diabetes With Progression of Microvascular Outcomes in the Diabetes Control and Complications Trial 40: 777–783. doi:10.2337/dc16-2426
- Lam, C.S.P., Chandramouli, C., Ahooja, V., Verma, S., 2020. SGLT-2 Inhibitors in Heart Failure: Current Management, Unmet Needs, and Therapeutic Prospects. *J. Am. Hear. Assoc.* 1–12. doi:10.1161/JAHA.119.013389
- Lang, R.M., Badano, L.P., Victor, M.A., Afilalo, J., Armstrong, A., Ernande, L., Flachskampf, F.A., Foster, E., Goldstein, S.A., Kuznetsova, T., Lancellotti, P., Muraru, D., Picard, M.H., Retzschel, E.R., Rudski, L., Spencer, K.T., Tsang, W., Voigt, J.U., 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. *J. Am. Soc. Echocardiogr.* 28: 1-39.e14. doi:10.1016/j.echo.2014.10.003
- Lang, R.M., Bierig, M., Devereux, R.B., Flachskampf, F.A., Foster, E., Pellikka, P.A., Picard, M.H., Roman, M.J., Seward, J., Shanewise, J.S., Solomon, S.D., Spencer, K.T., St John Sutton, M., Stewart, W.J., 2005. Recommendations for chamber quantification: A report from the American Society of Echocardiography’s guidelines and standards committee and the Chamber

Quantification Writing Group, developed in conjunction with the European Association of Echocardiograph. *J. Am. Soc. Echocardiogr.* 18: 1440–1463. doi:10.1016/j.echo.2005.10.005

Lawson, C.A., Zaccardi, F., Squire, I., Okhai, H., Davies, M., Huang, W., Mamas, M., Lam, C.S.P., Khunti, K., Kadam, U.T., 2020. Risk factors for heart failure: 20-year population-based trends by sex, socioeconomic status, and ethnicity. *Circ. Hear. Fail.* doi:10.1161/CIRCHEARTFAILURE.119.006472

Lazar, S., Rayner, B., Lopez, G., Mcgrath, K., McClements, L., 2020. Translational Metabolic Syndrome Research Mechanisms of heart failure with preserved ejection fraction in the presence of diabetes mellitus. *Transl. Metab. Syndr. Res.* 3: 1–5. doi:10.1016/j.tmsr.2020.04.002

Lee, M.M.Y., Petrie, M.C., McMurray, J.J. V, Sattar, N., 2020. How Do SGLT2 (Sodium-Glucose Cotransporter Receptor Agonists Reduce Cardiovascular Completed and Ongoing Mechanistic Trials. *Arter. Thromb Vasc Biol* 2: 506–522. doi:10.1161/ATVBAHA.119.311904

Lehrke, M., Marx, N., 2017. Diabetes Mellitus and Heart Failure. *Am. J. Cardiol.* 120: S37–S47. doi:10.1016/j.amjcard.2017.05.014

Leon, B.M., 2015. Diabetes and cardiovascular disease: Epidemiology, biological mechanisms, treatment recommendations and future research. *World J. Diabetes* 6: 1246. doi:10.4239/wjd.v6.i13.1246

Letnes, J.M., Nes, B., Vaardal-lunde, K., Slette, M.B., Aspenes, S.T., 2020. Left Atrial Volume, Cardiorespiratory Fitness, and Diastolic Function in Healthy Individuals: The HUNT Study, Norway. doi:10.1161/JAHA.119.014682

Leung, M., Wong, V.W., Hudson, M., Leung, D.Y., 2016. Impact of Improved Glycemic Control on Cardiac Function in Type 2 Diabetes Mellitus 1–9. doi:10.1161/CIRCIMAGING.115.003643

Lichtenauer, M., Jirak, P., Paar, V., Sipos, B., Kopp, K., Berezin, A.E., 2021. applied sciences Heart Failure and Diabetes Mellitus : Biomarkers in Risk

Stratification and Prognostication.

Lindman, B., 2017. The Diabetic Heart Failure With Preserved Ejection Fraction Phenotype. *Circulation* 736–740. doi:10.1161/CIRCULATIONAHA.116.025957

Little, W.C., Oh, J.K., 2009. Echocardiographic Evaluation of Diastolic Function Can Be Used to Guide Clinical Care. *Circulation* 120: 809. doi:10.1161/CIRCULATIONAHA.109.869602

Macdonald, M.R., Petrie, M.C., Varyani, F., Jan, O., Michelson, E.L., Young, J.B., Solomon, S.D., Granger, C.B., Swedberg, K., Yusuf, S., Pfeffer, M.A., McMurray, J.J. V, 2008. Impact of diabetes on outcomes in patients with low and preserved ejection fraction heart failure Reduction in Mortality and morbidity (CHARM) programme 1377–1385. doi:10.1093/eurheartj/ehn153

Martinez, M., Santamarina, J., Pavesi, A., Musso, C., Umpierrez, G.E., 2021. Glycemic variability and cardiovascular disease in patients with type 2 diabetes 1–7. doi:10.1136/bmjdr-2020-002032

Marwick, T.H., 2009. The future of echocardiography 594–601. doi:10.1093/ejechocard/jep056

Matsuhiro, Y., Nishino, M., Ukita, K., Kawamura, A., Nakamura, H., Yasumoto, K., Tsuda, M., Okamoto, N., Tanaka, A., Matsunaga-Lee, Y., Yano, M., Egami, Y., Shutta, R., Tanouchi, J., Yamada, T., Yasumura, Y., Tamaki, S., Hayashi, T., Nakagawa, A., Nakagawa, Y., Sotomi, Y., Nakatani, D., Hikoso, S., Sakata, Y., 2021. Underweight Is Associated with Poor Prognosis in Heart Failure with Preserved Ejection Fraction. *Int Hear. J* 62: 1042–1051. doi:10.1536/ihj.21-195

McHugh, K., DeVore, A., Wu, J., Matsouaka, R., Fonarow, G., Hernandez, A., 2019. Heart Failure With Preserved Ejection Fraction and Diabetes. *J. Am. Coll. Cardiol.* 73. doi:10.1016/j.jacc.2018.11.033

Mitter, S.S., Shah, S.J., Thomas, J.D., 2017. E/A and E/e' to Assess Diastolic

Dysfunction and LV Filling Pressure. *J. Am. Coll. Cardiol.* 69.
doi:10.1016/j.jacc.2016.12.037

Mocan, M., Diana, L., Hognogi, M., Anton, F.P., Chiorescu, R.M., Goidescu, C.M.,
Stoia, M.A., Farcas, A.D., 2020. Review Article Biomarkers of Inflammation
in Left Ventricular Diastolic Dysfunction 2019.

Modin, D., Andersen, D.M., 2019. Right Ventricular Function Evaluated by
Tricuspid Annular Plane Systolic Excursion Predicts Cardiovascular Death in
the. *J Am Hear. Assoc* 8. doi:10.1161/JAHA.119.012197

Nagueh, S.F., Smiseth, O.A., Appleton, C.P., Byrd, B.F., Dokainish, H., Edvardsen,
T., Flachskampf, F.A., Gillebert, T.C., Klein, A.L., Lancellotti, P., Marino, P.,
Oh, J.K., Popescu, B.A., Waggoner, A.D., 2016. Recommendations for the
Evaluation of Left Ventricular Diastolic Function by Echocardiography: An
Update from the American Society of Echocardiography and the European
Association of Cardiovascular Imaging. *J. Am. Soc. Echocardiogr.* 29: 277–
314. doi:10.1016/j.echo.2016.01.011

Nasir, S., Aguilar, D., 2013. Congestive Heart Failure and Diabetes: Balancing
Glycemic Control with Heart Failure Improvement Saifullah 110.
doi:10.1016/j.amjcard.2012.08.031.Congestive

Natali, A., Nesti, L., Tricò, D., Ferrannini, E., 2021. Effects of GLP-1 receptor
agonists and SGLT-2 inhibitors on cardiac structure and function: a narrative
review of clinical evidence. *Cardiovasc. Diabetol.* 20: 1–16.
doi:10.1186/s12933-021-01385-5

Nielsen, R., Nørrelund, H., Kampmann, U., Bøtker, H.E., Møller, N., Wiggers, H.,
2013. Effect of Acute Hyperglycemia on Left Ventricular Contractile Function
in Diabetic Patients with and without Heart Failure : Two Randomized Cross-
Over Studies 8. doi:10.1371/journal.pone.0053247

O'Brien, K.D., Hirsch, I.B., Riddle, M.C., Probstfield, J.L., 2016. Glucose
Variability in a 26-Week Randomized Comparison of Mealtime Treatment
With Rapid-Acting Insulin Versus GLP-1 Agonist in Participants With Type

2 Diabetes at High Cardiovascular Risk 1–9. doi:10.2337/dc15-2782

Obokata, M., Borlaug, B.A., 2018. The strengths and limitations of E/e' in heart failure with preserved ejection fraction. *Eur. J. Hear. Fail.* 20: 1312–1314. doi:10.1002/ejhf.1250.The

Obokata, M., Reddy, Y.N.V., Borlaug, B.A., 2020. Diastolic Dysfunction and Heart Failure With Preserved Ejection Fraction. *JACC Cardiovasc. Imaging* 13. doi:10.1016/j.jcmg.2018.12.034

Patel, A., MacMahon, S., Chalmers, J., Neal, B., Billot, L., Woodward, M., Marre, M., Cooper, M., Glasziou, P., Grobbee, D., Harnet, P., Harrap, S., 2008. Intensive Blood Glucose Control and Vascular Intensive Blood Glucose Control and Vascular Outcomes in Patients with Type 2 Diabetes.

Patil, V.C., Patil, H. V, Shah, K.B., Vasani, J.D., Shetty, P., 2011. Diastolic dysfunction in asymptomatic type 2 diabetes mellitus with normal systolic function. *J Cardiovasc Dis Res* 2. doi:10.4103/0975-3583.89805

Paulus, W.J., Canto, E.D., 2018. Distinct Myocardial Targets for Diabetes Therapy in Heart Failure With Preserved or Reduced Ejection Fraction. *JACC Hear. Fail.* 6: 1–7. doi:10.1016/j.jchf.2017.07.012

PERKENI, 2021. Pedoman Pengelolaan dan Pencegahan Diabetes Melitus tipe 2 di Indonesia 2021.

Peyser, T.A., Balo, A.K., Buckingham, B.A., Hirsch, I.B., Garcia, A., 2018. Glycemic Variability Percentage : A Novel Method for Assessing Glycemic Variability 20: 6–18. doi:10.1089/dia.2017.0187

Pfeffer, M.A., Shah, A.M., Borlaug, B.A., Res, C., 2019. Heart Failure With Preserved Ejection Fraction 1598–1617. doi:10.1161/CIRCRESAHA.119.313572

Picconi, F., Flaviani, A. Di, Malandrucchio, I., Giordani, I., Frontoni, S., 2012. Impact of glycemic variability on cardiovascular outcomes beyond glycated hemoglobin . Evidence and clinical perspectives. *Nutr. Metab. Cardiovasc.*

Dis. 22: 691–696. doi:10.1016/j.numecd.2012.03.006

Piconi, L., Quagliaro, L., Assaloni, R., Da Ros, R., Maier, A., Zuodar, G., Ceriello, A., 2006. Constant and intermittent high glucose enhances endothelial cell apoptosis through mitochondrial superoxide overproduction. *Diabetes. Metab. Res. Rev.* 22: 198–203. doi:10.1002/dmrr.613

Ponikowski, P., Poland, C., Voors, A.A., Germany, S.D.A., Uk, J.G.F.C., Uk, A.J.S.C., Harjola, V., Germany, V.F., Poland, E.A.J., Uk, P.N., Germany, B.P., Uk, J.P.R., Rosano, G.M.C., Rutten, F.H., 2016a. 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure The Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) Developed with the special contribution. *Eur. Heart J.* 37: 2129–2200. doi:10.1093/eurheartj/ehw128

Ponikowski, P., Spoletini, I., Coats, A.J.S., Piepoli, M.F., Rosano, G.M.C., 2019. Heart rate and blood pressure monitoring in heart failure 21: 13–16. doi:10.1093/eurheartj/suz217

Ponikowski, P., Voors, A.A., Anker, S.D., Bueno, H., Cleland, J.G.F., Coats, A.J.S., Falk, V., González-Juanatey, J.R., Harjola, V.P., Jankowska, E.A., Jessup, M., Linde, C., Nihoyannopoulos, P., Parissis, J.T., Pieske, B., Riley, J.P., Rosano, G.M.C., Ruilope, L.M., Ruschitzka, F., Rutten, F.H., Van Der Meer, P., Sisakian, H.S., Isayev, E., Kurlianskaya, A., Mullens, W., Tokmakova, M., Agathangelou, P., Melenovsky, V., Wiggers, H., Hassanein, M., Uuetoa, T., Lommi, J., Kostovska, E.S., Juilliere, Y., Aladashvili, A., Luchner, A., Chrysoshoou, C., Nyolczas, N., Thorgeirsson, G., Weinstein, J.M., Lenarda, A. Di, Aidargaliyeva, N., Bajraktari, G., Beishenkulov, M., Kamzola, G., Abdel-Massih, T., Celutkienė, J., Noppe, S., Cassar, A., Vataman, E., AbirKhalil, S., van Pol, P., Mo, R., Straburzynska-Migaj, E., Fonseca, C., Chioncel, O., Shlyakhto, E., Zavatta, M., Otasevic, P., Goncalvesova, E., Lainscak, M., Molina, B.D., Schaufelberger, M., Suter, T., Yilmaz, M.B., Voronkov, L., Davies, C., 2016b. 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *Eur. Heart J.* 37: 2129-2200m.

doi:10.1093/eurheartj/ehw128

Quagliaro, L., Piconi, L., Assaloni, R., Martinelli, L., Motz, E., Ceriello, A., 2003. Intermittent High Glucose Enhances Apoptosis Related to Oxidative Stress in Human Umbilical Vein Endothelial Cells The Role of Protein Kinase C and NAD(P)H-Oxidase Activation. *Diabetes* 2795–2804.

Randeria, S.N., Thomson, G.J.A., Nell, T.A., Roberts, T., Pretorius, E., 2019. Inflammatory cytokines in type 2 diabetes mellitus as facilitators of hypercoagulation and abnormal clot formation. *Cardiovasc. Diabetol.* 1–15. doi:10.1186/s12933-019-0870-9

Rayner, J.J., Banerjee, R., Holloway, C.J., Lewis, A.J.M., Peterzan, M.A., Francis, J.M., Neubauer, S., Rider, O.J., 2017. The relative contribution of metabolic and structural abnormalities to diastolic dysfunction in obesity. *Nat. Publ. Gr.* 42: 441–447. doi:10.1038/ijo.2017.239

Reddy, Y.N.V., Olson, T.P., Obokata, M., Melenovsky, V., Borlaug, B.A., 2018. Hemodynamic Correlates and Diagnostic Role of Cardiopulmonary Exercise Testing in Heart Failure With Preserved Ejection Fraction. *JACC Hear. Fail.* 6: 665–675. doi:10.1016/j.jchf.2018.03.003

Redfield, M.M., Jacobsen, S.J., Burnett, J.C., Mahoney, D.W., Bailey, K.R., Rodeheffer, R.J., 2003. Burden of Systolic and Diastolic Ventricular Dysfunction in the Community. *Jama* 289: 194. doi:10.1001/jama.289.2.194

Ren, X., Wang, Z., Guo, C., 2022. Long-term glycemic variability and risk of stroke in patients with diabetes: a meta-analysis. *Diabetol. Metab. Syndr.* 14: 1–11. doi:10.1186/s13098-021-00770-0

Riddle, M., Bakris, G., Blonde, L., Boulton, A., D'Alessio, D., DiMeglio, L., Gondar-Frederick, L., Hood, K., Hu, F., Kahn, S., 2020. Standards of Medical Care in diabetes — 2020. *Diabetes Care* 43.

Ridker, P.M., Anker, S.D., Kastelein, J.J.P., Cornel, J.H., Pais, P., Pella, D., Genest, J., Cifkova, R., Lorenzatti, A., Forster, T., Kopalava, Z., Simiti, L.V., Flather,

- M., Shimokawa, H., Ogawa, H., Dellborg, M., Rossi, P.R.F., Troquay, R.P.T., Libby, P., 2017. Antiinflammatory Therapy with Canakinumab for Atherosclerotic Disease. *N. Engl. J. Med.* 377: 1119–1131. doi:10.1056/NEJMoa1707914
- Rosano, G., Seferovic, P., Vitale, C., 2017. Comorbidities Heart Failure in Patients with Diabetes Mellitus Heart Failure in Diabetes Mellitus. *Card. Fail. Rev.* 52–55. doi:10.15420/cfr.2016
- Roth, G., 2018. Global , regional , and national age-sex-specific mortality for 282 causes of death in 195 countries and territories , 1980 – 2017 : a systematic analysis for the Global Burden of Disease Study 2017. *Lancet* 392: 1980–2017. doi:10.1016/S0140-6736(18)32203-7
- Rozenbaum, Z., Topilsky, Y., Khoury, S., Pereg, D., Laufer-perl, M., 2018. Association of body mass index and diastolic function in metabolically healthy obese with preserved ejection fraction. *Int. J. Cardiol.* #pagerange#. doi:10.1016/j.ijcard.2018.08.008
- Sakamoto, M., 2018. Type 2 Diabetes and Glycemic Variability : Various Parameters in Clinical Practice 10: 737–742.
- Sakamoto, M., Matsutani, D., Kayama, Y., 2018. Possibility of a New Therapeutic Strategy for Left Ventricular Dysfunction in Type 2 Diabetes 10: 799–805.
- Sanders-van Wijk, S., Tromp, J., Beussink-Nelson, L., Hage, C., Scedlund, S., Saraste, A., Swat, S.A., Sanchez, C., Njoroge, J., Tan, R.-S., Fermer, M.L., Gan, L.-M., Lund, L.H., Lam, C.S., Shah, S.J., 2020. Proteomic Evaluation of the Comorbidity- Inflammation Paradigm in Heart Failure With Preserved Ejection Fraction. *Circulation* 142: 2029–2044. doi:10.1161/CIRCULATIONAHA.120.045810
- Schiattarella, G.G., Sequeira, V., Ameri, P., 2020. Distinctive patterns of inflammation across the heart failure syndrome.
- Seidell, J.C., Pérusse, L., Després, J.P., Bouchard, C., 2001. Waist and hip

circumferences have independent and opposite effects on cardiovascular disease risk factors: The Quebec Family Study. *Am. J. Clin. Nutr.* 74: 315–321. doi:10.1093/ajcn/74.3.315

Shen, L., Rørth, R., Cosmi, D., Kristensen, S.L., Petrie, M.C., Cosmi, F., Latini, R., Køber, L., Anand, I.S., Carson, P.E., Granger, C.B., Komajda, M., McKelvie, R.S., Solomon, S.D., Staszewsky, L., Swedberg, K., Huynh, T., Zile, M.R., Jhund, P.S., McMurray, J.J. V, 2020. Insulin treatment and clinical outcomes in patients with diabetes and heart failure with preserved ejection fraction 974–984. doi:10.1002/ejhf.1535

Shi, K., Yang, M.X., Huang, S., Yan, W.F., Qian, W.L., Li, Y., Guo, Y.K., 2021. Effect of diabetes mellitus on the development of left ventricular contractile dysfunction in women with heart failure and preserved ejection fraction. *Cardiovasc. Diabetol.* 1–10. doi:10.1186/s12933-021-01379-3

Solomon, S.D., Anand, I.S., Ge, J., Maggioni, A.P., Martinez, F., Packer, M., Pfeffer, M.A., Pieske, B., Redfield, M.M., Rouleau, J.L., Veldhuisen, D.J. Van, Zannad, F., Zile, M.R., Desai, A.S., Claggett, B., Jhund, P.S., Boytsov, S.A., Cleland, J., Goncalvesova, E., Katova, T., Saraiva, J.F.K., Lelonek, M., Merkely, B., Senni, M., Shah, S.J., Zhou, J., Rizkala, A.R., Gong, J., Shi, V.C., Lefkowitz, M.P., 2019. Angiotensin–Neprilysin Inhibition in Heart Failure with Preserved Ejection Fraction. *N. Engl. J. Med.* 381. doi:10.1056/NEJMoa1908655

Srinisava Rao, M., 2015. LEFT ATRIAL VOLUME INDEX (LAVI) IN THE EVALUATION OF LEFT VENTRICULAR DIASTOLIC DYSFUNCTION. *J Evol. Med Dent Sci* 4: 2532–2539. doi:10.14260/jemds/2015/365

Stein, J., Bauer, B., Teupe, C., 2017. Improvement of impaired diastolic left ventricular function after diet-induced weight reduction in severe obesity 19–25.

Stratton, I.M., Adler, A.I., Neil, H.A.W., Matthews, D.R., Manley, S.E., Cull, C.A., Hadden, D., Turner, R.C., Holman, R.R., Prospective, U.K., 2000. Association

of glycaemia with macrovascular and prospective observational study 405–412.

Suh, S., Kim, J.H., 2015. Glycemic Variability : How Do We Measure It and Why Is It Important ? 273–282.

Sun, B., Luo, Z., Zhou, J., 2021. Comprehensive elaboration of glycemic variability in diabetic macrovascular and microvascular complications. *Cardiovasc. Diabetol.* 20: 1–13. doi:10.1186/s12933-020-01200-7

Tanaka, H., 2018. Utility of strain imaging in conjunction with heart failure stage classification for heart failure patient management. *J. Echocardiogr.* doi:10.1007/s12574-018-0408-2

Tang, X., Zhong, J., Zhang, H., Luo, Y., Liu, X., Peng, L., Zhang, Y., Qian, X., Jiang, B., Liu, J., Li, S., Chen, Y., 2019. Visit-to-visit fasting plasma glucose variability is an important risk factor for long-term changes in left cardiac structure and function in patients with type 2 diabetes. *Cardiovasc. Diabetol.* 18: 1–13. doi:10.1186/s12933-019-0854-9

Tang, Y., Zeng, X., Feng, Y., Chen, Q., Liu, Z., Luo, H., 2021. Association of Systemic Immune-Inflammation Index With Short-Term Mortality of Congestive Heart Failure : A Retrospective Cohort Study 8: 1–15. doi:10.3389/fcvm.2021.753133

Thassio, M., Lin, Y.-N., Ibrahim, A., 2021. Chronic low- - grade inflammation in heart failure with preserved ejection fraction 1–18. doi:10.1111/ace.13453

Thrainsdottir, I., Aspelund, T., Thorgeirsson, G., Gudnason, V., Hardarson, T., Malmberg, K., Sigurdsson, G., Ryden, L., 2005. The Association Between Glucose Abnormalities and Heart Failure in the Population-Based Reykjavik Study. *Diabetes Care* 28: 612–616.

Toida, T., Toida, R., Yamashita, R., Komiya, N., Uezono, S., Komatsu, H., Ishikawa, T., Kitamura, K., Sato, Y., Fujimoto, S., 2019. Grading of Left Ventricular Diastolic Dysfunction with Preserved Systolic Function by the

2016 American Society of Echocardiography / European Association of Cardiovascular Imaging Recommendations Contributes to Predicting Cardiovascular Events in Hemodia 8891692: 190–200. doi:10.1159/000496064

Tribouilloy, C., Rusinaru, D., Mahjoub, H., Levy, F., Souliere, V., Rusinaru, D., Peltier, M., Slama, M., Massy, Z., 2008. Prognosis of heart failure with preserved ejection fraction: a 5 year prospective population-based study. *Eur. Heart J.* 29: 339–347. doi:10.1093/eurheartj/ehm554

Tromp, J., Teng, T., Tay, W.T., Hung, C.L., Narasimhan, C., Shimizu, W., Park, S.W., Liew, H.B., Ngarmukos, T., Reyes, E.B., Siswanto, B.B., Yu, C., Zhang, S., Yap, J., Macdonald, M., Ling, L.H., Leineweber, K., Richards, A.M., Zile, M.R., Anand, I.S., Lam, C.S.P., 2019. Heart failure with preserved ejection fraction in Asia. *Eur. J. Hear. Fail.* 23–36. doi:10.1002/ejhf.1227

Tsatsoulis, A., Paschou, S.A., 2020. Metabolically Healthy Obesity : Criteria , Epidemiology , Controversies , and Consequences.

Tylee, T.S., Dace, L., 2012. Glycemic Variability : Looking Beyond the A1C. *Diabetes Spectr.* 149–153.

Valensi, P., Extramiana, F., Lange, C., Cailleau, M., Haggui, A., Blanche, P.M., Tichet, J., Balkau, B., Group, S., 2011. Article : Pathophysiology Influence of blood glucose on heart rate and cardiac autonomic function . The DESIR study 440–449. doi:10.1111/j.1464-5491.2010.03222.x

Vazquez-benitez, G., Desai, J.R., Xu, S., Goodrich, G.K., Schroeder, E.B., Nichols, G.A., Segal, J., Butler, M.G., Karter, A.J., Steiner, J.F., Newton, K.M., Morales, L.S., Pathak, R.D., Thomas, A., Reynolds, K., Kirchner, H.L., 2015. Preventable Major Cardiovascular Events Associated With Uncontrolled Glucose , Blood Pressure , and Lipids and Active Smoking in Adults With Diabetes With and Without Cardiovascular Disease : A Contemporary Analysis 38: 905–912. doi:10.2337/dc14-1877

Verma, S., Tsutsui, H., Brueckmann, M., Jamal, W., Kimura, K., Schnee, J., Zeller,

- C., Cotton, D., Bocchi, E., Böhm, M., Choi, D., Chopra, V., Chuquiure, E., Giannetti, N., 2020. Cardiovascular and Renal Outcomes with Empagliflozin in Heart Failure 1–12. doi:10.1056/NEJMoa2022190
- Virk, S.A., Donaghue, K.C., Hi, Y., Fracp, C., Benitez-aguirre, P., Fracos, S.H., Pryke, A., Mappstat, A.C., Craig, M.E., 2016. Association Between HbA 1 c Variability and Risk of Microvascular Complications in Adolescents with Type 1 Diabetes 1–8. doi:10.1210/jc.2015-3604
- Wachter, R., Shah, S.J., Cowie, M.R., Szecsödy, P., Shi, V., Ibram, G., Gong, J., Klebs, S., Pieske, B., 2020. Angiotensin receptor neprilysin inhibition versus individualized RAAS blockade : design and rationale of the PARALLAX trial. doi:10.1002/ehf2.12694
- Wada, T., Onogi, Y., Kimura, Y., Nakano, T., Fusanobori, H., 2013. Cilostazol ameliorates systemic insulin resistance in diabetic db / db mice by suppressing chronic inflammation in adipose tissue via modulation of both adipocyte and macrophage functions. *Eur. J. Pharmacol.* 707: 120–129. doi:10.1016/j.ejphar.2013.03.016
- Wan, S.-H., Vogel, M.W., Chen, H.H., 2011. Preclinical Diastolic Dysfunction. *J. Am. Coll. Cardiol.* 4: 407–416. doi:10.1016/j.jacc.2013.10.063.Preclinical
- Wang, X., Zhao, X., Dorje, T., Yan, H., Qian, J., Ge, J., 2014. Glycemic variability predicts cardiovascular complications in acute myocardial infarction patients with type 2 diabetes mellitus. *Int. J. Cardiol.* 172: 498–500. doi:10.1016/j.ijcard.2014.01.015
- Wang, Y., Liang, C., Gopal, D.M., Ayalon, N., Donohue, C., Santhanakrishnan, R., Sandhu, H., Perez, A.J., Downing, J., Gokce, N., Colucci, W.S., Ho, J.E., Fail, C.H., 2015. Preclinical Systolic and Diastolic Dysfunctions in Metabolically Healthy and Unhealthy Obese Individuals. doi:10.1161/CIRCHEARTFAILURE.114.002026
- Wang, Z., Ruan, H., Li, L., Wei, X., Zhu, Y., Wei, J., Chen, X., He, S., 2021. Assessing the relationship between systemic immune-inflammation index and

mortality in patients with hypertrophic cardiomyopathy.

- Wei, F., Sun, X., Zhao, Y., Zhang, H., Diao, Y., Liu, Z., 2016. Excessive visit-to-visit glycemic variability independently deteriorates the progression of endothelial and renal dysfunction in patients with type 2 diabetes mellitus. *BMC Nephrol.* 1–14. doi:10.1186/s12882-016-0300-0
- Westermann, D., Linthout, S. Van, Dhayat, S., Dhayat, N., Escher, F., Bu, C., Spillmann, F., Noutsias, M., Riad, A., Schultheiss, H., Tscho, C., 2007. Cardioprotective and Anti-Inflammatory Effects of Experimental Diabetic Cardiomyopathy 56. doi:10.2337/db06-1662.CAM
- Wu, C., Lin, J., Wu, L., Chang, C., Lucia, C. De, 2019. Risk of Heart Failure Hospitalization Associated With Cilostazol in Diabetes : A Nationwide Case – Crossover Study 9: 1–9. doi:10.3389/fphar.2018.01467
- Yamada, H., Goh, P.P., Sun, J.P., Odabashian, J., Garcia, M.J., Thomas, J.D., Klein, A.L., 2002. Prevalence of left ventricular diastolic dysfunction by Doppler echocardiography: Clinical application of the Canadian consensus guidelines. *J. Am. Soc. Echocardiogr.* 15: 1238–1244. doi:10.1067/mje.2002.124877
- Yamada, H., Klein, A.L., 2010. Diastology 2010: Clinical approach to diastolic heart failure. *J. Echocardiogr.* 8: 65–79. doi:10.1007/s12574-010-0055-8
- Yang, C.D., Shen, Y., Ding, F.H., Yang, Z.K., Hu, J., Shen, W.F., Zhang, R.Y., Lu, L., Wang, X.Q., 2020. Visit-to-visit fasting plasma glucose variability is associated with left ventricular adverse remodeling in diabetic patients with STEMI. *Cardiovasc. Diabetol.* 19: 1–11. doi:10.1186/s12933-020-01112-6
- Yang, Y., Wu, C., Hsu, P., Chen, S., Huang, S., Chan, W.L., Lin, S., Chou, C., Chen, J., Pan, J., Charng, M., Chen, Y., Wu, T., Lu, T., Huang, P., Cheng, H., Huang, C., Sung, S., Lin, Y., Leu, H., 2020. Systemic immune-inflammation index (SII) predicted clinical outcome in patients with coronary artery disease 1–11. doi:10.1111/eci.13230
- Yokota, S., Tanaka, H., Mochizuki, Y., Soga, F., Yamashita, K., Matsumoto, K.,

Hirota, Y., Ogawa, W., Hirata, K., 2019. Association of glycemic variability with left ventricular diastolic function in type 2 diabetes mellitus. *Cardiovasc. Diabetol.* 1–8. doi:10.1186/s12933-019-0971-5

Yu, J.H., Han, K., Park, S., Lee, D.Y., Nam, G.E., Seo, J.A., Kim, S.G., Baik, S.H., Park, Y.G., Kim, S.M., Kim, N.H., Choi, K.M., 2019. Effects of long-term glycemic variability on incident cardiovascular disease and mortality in subjects without diabetes: A nationwide population-based study. *Medicine (Baltimore)*. 98: e16317. doi:10.1097/MD.00000000000016317

Zhou, Z., Sun, B., Huang, S., Zhu, C., Bian, M., 2020. Glycemic variability : adverse clinical outcomes and how to improve it ? *Cardiovasc. Diabetol.* 1–14. doi:10.1186/s12933-020-01085-6

Zile, M.R., Baicu, C.F., Ikonomidis, J.S., Stroud, R.E., Nietert, P.J., Bradshaw, A.D., Slater, R., Palmer, B.M., Buren, P. Van, Meyer, M., Redfield, M.M., Bull, D.A., Granzier, H.L., Lewinter, M.M., 2015. Heart Failure Myocardial Stiffness in Patients With Heart Failure and a Preserved Ejection Fraction Contributions of Collagen and Titin 1247–1259. doi:10.1161/CIRCULATIONAHA.114.013215