

BAB 5

KESIMPULAN DAN SARAN

5.1 Kesimpulan

Berdasarkan kajian pustaka pada 10 artikel penelitian terkait yang membahas efektivitas dan efek samping penggunaan ivabradine pada pasien gagal jantung yang dilaksanakan pada dilaksanakan mulai dari Agustus 2021 hingga Maret 2022 menggunakan database Pubmed dan Google Sccholar serta menggunakan Pearl Grow Strategi.

Dapat disimpulkan bahwa :

1. Penggunaan terapi ivabradine tunggal dengan dosis awal ($2 \times 2,5\text{mg}$) po, kemudian dosis disesuaikan $2x$ ($2,5\text{mg}-7,5\text{mg}$) po, dengan rentang waktu 1 hingga 12 bulan efektif mengalami penurunan parameter *heart rate*.
2. Penggunaan terapi kombinasi ivabradine $2x$ ($2,5\text{mg}-7,5\text{mg}$) dengan Bisoprolol $1x$ ($2,5\text{mg}-5\text{mg}$) terbukti lebih efektif terhadap penurunan denyut jantung tanpa menimbulkan efek samping.
3. Penggunaan terapi kombinasi ivabradine dengan sacubitril/valsartan dapat meningkatkan LVEF secara signifikan.
4. Terjadi efek samping minor pada terapi ivabradine tunggal dan ivabradine kombinasi yaitu, bradikardia simtomatik atau asimtomatik, serta terjadinya Fosfen ringan.

5.2 Saran

1. Perlu dilakukan penelitian lebih lanjut untuk mengetahui efektivitas dan efek samping penggunaan ivabradine pada pasien gagal jantung agar mendapatkan data yang lebih lengkap dan jelas.
2. Perlu dilakukan kajian pustaka serta penelitian lebih lanjut dengan memperluas *database* untuk mendapat artikel ilmiah lebih banyak dan valid untuk meyakinkan dan memberi pedoman bahwa ivabradine dapat digunakan secara efektif pada pasien gagal jantung.

DAFTAR PUSTAKA

- Badu-Boateng, C., Jennings, R., & Hammersley, D.2018. The therapeutic role of ivabradine
- Benstoem, C., Kalvelage, C., Breuer, T., Heussen, N., Marx, G., Stoppe, C., & Brandenburg, V.2020. Ivabradine as adjuvant treatment for chronic heart failure. *Cochrane Database of Systematic Reviews*, **11 (11)**. CD013004
- Bocchi, E. A., Rassi, S., Guimarães, G. V., & Argentina, Chile, and Brazil SHIFT Investigators. 2018. Safety profile and efficacy of ivabradine in heart failure due to Chagas heart disease: a post hoc analysis of the SHIFT trial. *ESC Heart Failure*, **5(3)** : 249-256.
- Dipiro, J. T., Talbert, R. L., Yee, G. C., Matzke, G. R., Wells, B. G., & Posey, L.M.2017. *Pharmacotherapy: a pathophysiologic approach*, ed (pp.145-51).
- Farooq, F., Imran, N., & Abbas, M. 2021. Ivabradine effects on heart rate and quality of life among chronic heart failure patients. *JPMA. The Journal of the Pakistan Medical Association*, **71(1 (A))** : 86-89.
- Hill Medical, New York.
- Hohneck, A. L., Fries, P., Stroeder, J., Schneider, G., Schirmer, S. H., Reil, J. C., ... & Custodis, F.2021. Effects of selective heart rate reduction with ivabradine on LV function and central hemodynamics in patients with chronic coronary syndrome. *IJC Heart & Vasculature*, **34**, 100757.
- Hossain, B. (2022). Ivabradine and Bisoprolol Prescribed in Combination versus Maximum Dose Titration of Bisoprolol in Patients with Systolic Heart Failure and Left Ventricular Systolic Dysfunction. *Sch J App Med Sci*, **5**, 741-748.in heart failure. *Therapeutic Advances in Chronic Disease*, **9(11)** : 199-207.
- Jing, Z., Qing, G., Li-hong, Z., Liang, S., Dong-xia, L. I., Cui-cui, G., & Guo-hong, Y. (2019). Effect of ivabradine in the treatment of acute exacerbation of chronic obstructive pulmonary disease with heart failure. *Journal of Hainan Medical University*, **25(19)**: 31-36.
- Jingmin, Z., Yamei, X., Yuhui, Z., Wenhui, D., Baopeng, T., Caizhen, Q., ... & Junbo, G. 2022. Real-World Effectiveness of Ivabradine in

- Chinese Patients with Chronic Heart Failure: Interim Analysis of the POSITIVE Study. *American Journal of Cardiovascular Drugs*, **22(3)**: 345-354.
- Komajda, M., Isnard, R., Cohen-Solal, A., Metra, M., Pieske, B., Ponikowski, P. 2017. Effect of ivabradine in patients with heart failure with preserved ejection fraction: the EDIFY randomized placebo-controlled trial. *European Journal of Heart Failure*, **19(11)**: 1495-1503.
- Lawson, C. A., Zaccardi, F., Squire, I., Okhai, H., Davies, M., Huang, W., ... & Kadam, U. T. 2020. Risk factors for heart failure: 20-year population-based trends by sex, socioeconomic status, and ethnicity. *Circulation: Heart Failure*, **13(2)**: e006472.
- Lee, Y. H., Lin, P. L., Chiou, W. R., Huang, J. L., Lin, W. Y., Liao, C. T., ... & Chang, H. Y. (2021). Combination of ivabradine and sacubitril/valsartan in patients with heart failure and reduced ejection fraction. *ESC heart failure*, **8(2)**: 1204-1215.
- Leopold, J. A., Kawut, S. M., Aldred, M. A., Archer, S. L., Benza, R. L., Bristow, M. R., ... & Xiao, L. 2021. Diagnosis and treatment of right heart failure in pulmonary vascular diseases: a National Heart, Lung, and Blood Institute workshop. *Circulation: Heart Failure*, **14(6)**: e007975.
- Marzali, A. 2016. Menulis kajian pustaka. *Jurnal Etnografi Indonesia*.
- McDonagh, T. A., Metra, M., Adamo, M., Gardner, R. S., Baumbach, A., Böhm, M., ... & Group, E. S. D. 2021. ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *European heart journal*.
- Mentz, R. J., DeVore, A. D., Tasissa, G., Heitner, J. F., Piña, I. L., Lala, A., ... & Hernandez, A. F. (2020). PredischaRge initiation of Ivabradine in the ManagEment of Heart Failure: results of the PRIME-HF Trial. *American heart journal*, **223**, 98-105.
- Nurkhalis, N., & Adista, R. J. 2020. Manifestasi Klinis dan Tatalaksana Gagal Jantung. *Jurnal Kedokteran Nanggroe Medika*, **3(3)**: 36-46.
- Othman, K. M. S., Mostafa, M. A. R., Yosef, A. E., & Abdeltawab, A. A. 2019. Safety and efficacy of off-label use of ivabradine in patients with acute heart failure. *Journal of the Saudi Heart Association*, **31(4)**: 179-187.

Perhimpunan Dokter Spesialis Kardiovaskular Indonesia.2020.Pedoman Tatalaksana Gagal Jantung. PERKI.

Soylu, K., Cerik, I. B., Aksan, G., Nar, G., & Meric, M. 2020. Evaluation of ivabradine in left ventricular dyssynchrony and reverse remodeling in patients with chronic heart failure. *Journal of Arrhythmia*, **36(4)**: 762-767.

Tsutsui, H., Momomura, S. I., Yamashina, A., Shimokawa, H., Kihara, Y., Saito, Y., ... & J-SHIFT Study Investigators. 2019. Efficacy and safety of ivabradine in Japanese patients with chronic heart failure—J-SHIFT study—. *Circulation Journal*, CJ-19.

Villacorta, A. S., Villacorta, H., Caldas, J. A., Precht, B. C., Porto, P. B., Rodrigues, L. U., ... & da Nóbrega, A. C. L. 2019. Effects of heart rate reduction with either pyridostigmine or ivabradine in patients with heart failure: a randomized, double-blind study. *Journal of Cardiovascular Pharmacology and Therapeutics*, **24(2)**:139-145.