PubMed Search

Search: (Guideline directed treatment OR Guidelines as Topic[MeSH]) AND (HFrEF O

Effects of renin-angiotensin system inhibitor and beta-blocker use on mortality in older patients with heart failure with reduced ejection fraction in Japan. (2024)

1. Front Cardiovasc Med. 2024 May 31;11:1377228. doi: 10.3389/fcvm.2024.1377228. eCollection 2024.

Effects of renin-angiotensin system inhibitor and beta-blocker use on mortality in older patients with heart failure with reduced ejection fraction in Japan.

Kawada K(1)(2), Ishida T(3), Fukuda H(4), Hyohdoh Y(5), Kubo T(6), Hamada T(6), Baba Y(6), Hayashi T(7), Aizawa F(2)(8), Yagi K(2)(9), Izawa-Ishizawa Y(2)(10), Niimura T(2)(9), Abe S(1), Goda M(2)(8), Kitaoka H(6), Ishizawa K(2)(8)(9).

Author information:

(1)Department of Clinical Pharmacy Practice Pedagogy, Tokushima University Graduate School of Biomedical Sciences, Tokushima, Japan.

(2)Department of Clinical Pharmacology and Therapeutics, Tokushima University Graduate School of Biomedical Sciences, Tokushima, Japan.

(3)Department of Pharmacy, Kochi Medical School Hospital, Kochi, Japan.

(4)Department of Neurosurgery, Kochi Medical School, Kochi University, Nankoku, Japan.

(5)Center of Medical Information Science, Kochi Medical School, Kochi University, Kochi, Japan.

(6)Department of Cardiology and Geriatrics, Kochi Medical School, Kochi University, Kochi, Japan.

(7)Department of Emergency and Disaster Medical, Pharmacy Faculty of Pharmaceutical Sciences, Fukuoka University, Fukuoka, Japan.

(8)Department of Pharmacy, Tokushima University Hospital, Tokushima, Japan.

(9)Clinical Research Center for Developmental Therapeutics, Tokushima University Hospital, Tokushima, Japan.

(10)Department of General Medicine, Taoka Hospital, Tokushima, Japan.

INTRODUCTION: Guideline-directed medical therapy with renin-angiotensin system (RAS) inhibitors and beta-blockers has improved the survival of patients with heart failure (HF) and reduced left ventricular ejection fraction (HFrEF). However, it is unclear whether RAS inhibitors and beta-blockers can be administered to older patients with HF. Therefore, this study aimed to investigate the effects of beta-blockers and RAS inhibitors on the prognosis of older patients with HFrEF.

METHODS: Demographic, clinical, and pharmacological data from 1,061 patients with acute decompensated HF, enrolled in the Kochi Registry of Subjects with Acute Decompensated Heart Failure (Kochi YOSACOI study), were analyzed to assess their impact on mortality. Additionally, a machine learning approach was applied to complement the conventional statistical model for analysis. Patients with HFrEF (n?=?314) were divided into the all-cause mortality within 2 years group (n?=?80) and the survivor group (n?=?234).

RESULTS: Overall, 41.1% (129/314) of the patients were aged ?80, and 25.5% (80/314) experienced all-cause mortality within 2 years. Furthermore, 57.6% (181/314) and 79.0% (248/314) were prescribed RAS inhibitors and beta-blockers, respectively. Our analysis showed that RAS inhibitor use was associated with reduced all-cause mortality and cardiac death in patients with HFrEF of all ages (P?<?0.001), and beta-blocker use had an interaction with age. Machine learning revealed that the use of beta-blockers altered the risk of mortality, with a threshold of approximately 80 years of age. Beta-blocker use was associated with

lower all-cause mortality and cardiac death in patients with HFrEF aged <80 years (P?<?0.001) but not in those aged ?80 years (P?=?0.319 and P?=?0.246, respectively). These results suggest that beta blockers may differ in their all-cause mortality benefits according to age.

CONCLUSIONS: RAS inhibitors prevented all-cause mortality and cardiac death at all ages, whereas beta-blockers had different effects depending on the patient's age. This study suggested that the choice of beta-blockers and RAS inhibitors is more important in older patients with HFrEF than in younger patients with the same condition.

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Conflict of interest statement: HK reports the receipt of personal fees from Takeda Pharmaceutical Company, Ltd; Daiichi-Sankyo Company; and Mitsubishi Tanabe Pharma Corporation, Ltd.; and grants from Takeda Pharmaceutical Company, Ltd; Daiichi-Sankyo Company; Bayer Yakuhin, Ltd; Otsuka Pharmaceutical, Ltd; and Actelion Pharmaceuticals Japan, Ltd. The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Early Initiation of Guideline Directed Medical Therapy for Heart Failure Following Cardiac Surgery. (2024)

1. Ann Thorac Surg. 2024 Jun 13:S0003-4975(24)00463-6. doi: 10.1016/j.athoracsur.2024.05.034. Online

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Early Initiation of Guideline Directed Medical Therapy for Heart Failure Following Cardiac Surgery.

Schwann AN(1), Jaffe LM(2), Givertz MM(3), Wood KL(4), Engelman DT(5).

Author information:

(1)Department of Internal Medicine, Yale School of Medicine, New Haven, CT, USA.

(2)Heart & Vascular Program, Baystate Health, University of Massachusetts Chan Medical School-Baystate, Springfield, MA, USA.

(3)Division of Cardiovascular Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA.

(4)Division of Cardiac Surgery, University of Rochester Medical Center, Rochester, NY, USA.

(5)Heart & Vascular Program, Baystate Health, University of Massachusetts Chan Medical School-Baystate, Springfield, MA, USA. Electronic address: daniel.engelman@baystatehealth.org.

There is an evolving role for guideline directed medical therapy (GDMT) in managing heart failure with reduced ejection fraction (HFrEF) following cardiac surgery. GDMT is based on the use of pharmacological agents from each of the four distinct drug classes, also known as the four pillars of heart failure therapy; beta blockers, renin-angiotensin system inhibitors often paired with neprilysin inhibitors, mineralocorticoid receptor antagonists, and sodium-glucose cotransporter-2 inhibitors. Despite the demonstrated benefits of GDMT in reducing mortality and hospitalization rates in the non-surgical literature, there is conspicuous underutilization of GDMT following cardiac surgery. The lack of published literature and practical challenges surrounding the timing for initiation of GDMT in the immediate postoperative period have

limited standardized implementation strategies. A multidisciplinary approach will be necessary to assist in initiating, titrating, and monitoring the response to these therapies in HFrEF patients following cardiac surgery.

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PMID: 38878947

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Sodium Zirconium Cyclosilicate in HFrEF and Hyperkalemia: REALIZE-K Design and Baseline Characteristics. (2024)

1. JACC Heart Fail. 2024 May 13:S2213-1779(24)00400-1. doi: 10.1016/j.jchf.2024.05.003. Online ahead

Sodium Zirconium Cyclosilicate in HFrEF and Hyperkalemia: REALIZE-K Design and Baseline Characteristics.

Kosiborod MN(1), Cherney D(2), Connelly K(3), Desai AS(4), Guimarães PO(5), Kuthi L(6), Lala A(7), Madrini V Jr(8), Merkely B(9), Villota JN(10), Squire I(11), Testani JM(12), Vaclavik J(13), Verma S(14), Wranicz J(15), Dahl M(16), Eudicone JM(17), Friberg L(16), Petrie MC(18).

Author information:

(1)Saint Luke's Mid America Heart Institute and University of Missouri-Kansas City, Kansas City, Missouri, USA. Electronic address: mkosiborod@saint-lukes.org.

(2)University Health Network and Mount Sinai Hospital and University of Toronto, Toronto, Ontario, Canada.

(3)St. Michael's Hospital, Toronto, Ontario, Canada.

(4)Cardiovascular Division, Brigham and Women's Hospital, Boston, Massachusetts, USA. Electronic address: https://twitter.com/akshaydesaimd.

(5)Cardiovascular Clinical Trials Academic Research Organization, Hospital Albert Einstein, São Paulo, Brazil.

(6)Semmelweis University, Budapest, Hungary.

(7)The Mount Sinai Hospital, New York, New York, USA.

(8)Hospital Israelita Albert Einstein, São Paulo, Brazil.

(9)Semmelweis Egyetem, Budapest, Hungary.

(10)Hospital Clinico Universitario de Valencia, Valencia, Spain.

(11)University Hospitals of Leicester NHS Trust - Glenfield Hospital, Leicester, United Kingdom.

(12)Section of Cardiovascular Medicine, Yale University, Guilford, Connecticut, USA.

(13)University Hospital Ostrava and Faculty of Medicine, University of Ostrava, Czech Republic.

(14)Institute of Unity Health Toronto and University of Toronto, Toronto, Ontario, Canada.

(15)Department of Electrocardiology, Medical University of Lodz, ?ód?, Poland.

(16)BioPharmaceuticals Medical, AstraZeneca, Gothenburg, Sweden.

(17)BioPharmaceuticals Medical (Evidence), AstraZeneca, Wilmington, Delaware, USA.

(18)Institute of Cardiovascular and Medical Sciences, University of Glasgow, and Glasgow Royal Infirmary, Glasgow, United Kingdom. Electronic address: https://twitter.com/markcpetrie20.

BACKGROUND: Mineralocorticoid receptor antagonists (MRAs) improve outcomes in patients with heart failure and reduced ejection fraction (HFrEF). However, MRAs are often underused because of hyperkalemia concerns.

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OBJECTIVES: The purpose of this study was to assess whether sodium zirconium cyclosilicate (SZC), a nonabsorbed crystal that traps and rapidly lowers potassium, enables MRA use in patients with HFrEF and prevalent hyperkalemia (or at high risk).

METHODS: REALIZE-K is a prospective, double-blind, placebo-controlled trial in patients with HFrEF (NYHA functional class II-IV; left ventricular ejection fraction ?40%), optimal therapy (except MRA), and prevalent hyperkalemia (or at high risk). During the open-label run-in, all participants underwent protocol-mandated spironolactone titration (target: 50 mg daily); those with prevalent (cohort 1) or incident (cohort 2) hyperkalemia during titration started SZC. Participants achieving normokalemia while on spironolactone ?25 mg daily were randomized to continuing SZC or matching placebo for 6 months. The primary composite endpoint was proportion of participants with optimal response (normokalemia, on spironolactone ?25 mg daily, no rescue for hyperkalemia [months 1-6]).

RESULTS: Of 365 patients (run-in), 202 were randomized. Baseline characteristics included mean age 70 years, prevalent comorbidities (78% estimated glomerular filtration rate <60 mL/min/1.73 m2, 38% atrial fibrillation/flutter), high N-terminal pro B-type natriuretic peptide (median 1,136 pg/mL), and high HFrEF therapy use (64% sacubitril/valsartan, 96% beta-blocker, 42% sodium glucose co-transporter 2 inhibitor). At randomization, 78% were receiving spironolactone 50 mg daily.

CONCLUSIONS: REALIZE-K is the first trial to evaluate whether SZC can enable rapid and safe MRA optimization and long-term continuation in patients with HFrEF and prevalent/high risk of hyperkalemia. (Study to Assess Efficacy and

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Safety of SZC for the Management of High Potassium in Patients with Symptomatic HFrEF Receiving Spironolactone; NCT04676646).

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PMID: 38878009

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CMR characterization of patients with heart failure and left bundle branch block. (2024)

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CMR characterization of patients with heart failure and left bundle branch block.

Tomoaia R(1)(2), Harrison P(1), Bevis L(1), Wahab A(1), Thompson P(1), Saunderson CED(1), Levelt E(1), Dall'Armellina E(1), Garg P(3), Greenwood JP(1), Plein S(1), Swoboda PP(1).

Author information:

(1)Biomedical Imaging Sciences Department, Leeds Institute of Cardiovascular and Metabolic Medicine, University of Leeds, Woodhouse, Leeds, West Yorkshire LS2 9JT, UK.

(2)Cardiology Department, Iuliu Hatieganu University of Medicine and Pharmacy,

Cluj-Napoca, Romania.

(3)Department of Cardiovascular and Metabolic Health, Norwich Medical School, University of East Anglia, Norfolk, UK.

AIMS: We aimed to identify the distinctive cardiovascular magnetic resonance (CMR) features of patients with left bundle branch block (LBBB) and heart failure with reduced ejection fraction (HFrEF) of presumed non-ischaemic aetiology. The secondary aim was to determine whether these individuals exhibit characteristics that could potentially serve as predictors of left ventricular ejection fraction (LVEF) recovery as compared with patients without LBBB.

METHODS AND RESULTS: We prospectively recruited patients with HFrEF (LVEF ? 40%) on echocardiography who were referred for early CMR examination. Patients with an established diagnosis of coronary artery disease and known structural or congenital heart disease were excluded. LV recovery was defined as achieving ?10% absolute improvement to ?40% in LVEF between baseline evaluation to CMR. A total of 391 patients were recruited including 115 (29.4%) with LBBB. Compared with HF patients without LBBB, those with LBBB exhibited larger left ventricles and smaller right ventricles, but no differences were observed with respect to LVEF (35.8 ± 12 vs. 38 ± 12%, P = 0.105). The overall rate of LV recovery from baseline echocardiogram to CMR (70 [42-128] days) was not significantly different between LBBB and non-LBBB patients (27.8% vs. 31.5%, P = 0.47). Reduced LVEF remained an independent predictor of LV non-recovery only in patients with LBBB.

CONCLUSION: Patients presenting with HFrEF and LBBB had larger LV cavities and smaller RV cavities than those without LBBB but no difference in prevalence of scar or ischaemia. The rates of LV recovery were similar between both groups,

which supports current guidelines to defer device therapy until 3-6 months of guideline-directed medical therapy, rather than early CMR and device implantation.

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Conflict of interest statement: Conflict of interest: None declared.

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Reassessing heart failure therapy in Thailand: Patient insights and treatment outcomes from the Thai heart failure registry. (2024)

1. Int J Cardiol. 2024 Jun 4;410:132235. doi: 10.1016/j.ijcard.2024.132235. Online ahead of print.

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Author information:

(1)Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand. Electronic address: rungroj.kri@mahidol.ac.th.

(2)Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand.

(3)Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand.

(4)Lampang Hospital, Lampang, Thailand.

(5)Chaophraya Yommarat Hospital, Suphanburi, Thailand.

(6)Chiangrai Prachanukroh Hospital, Chiangrai, Thailand.

(7)Police General Hospital, Bangkok, Thailand.

(8)Faculty of Medicine, Prince of Songkla University, Songkla, Thailand.

(9)Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand.

(10)Surin Hospital, Surin, Thailand.

(11)Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand.

(12)Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand.

(13)Faculty of Medicine, Thammasat University, Pathum Thani, Thailand.

(14)Department of Internal Medicine, Phramongkutklao Hospital, Bangkok, Thailand.

(15)Vichaiyut Hospital and Medical Center, Bangkok, Thailand.

BACKGROUND: This research analyzed the demographics, management, and outcomes of patients with heart failure (HF) in Thailand.

METHODS: The Thai Heart Failure Registry prospectively enrolled patients diagnosed with HF from 36 hospitals in Thailand. Follow-up data were recorded at 6, 12, 18, and 24 months. This study primarily focused on two outcomes: mortality and HF-related hospitalizations.

RESULTS: The study included 2639 patients aged at least 18. Their mean age was 59.2 ± 14.5 years, and most were male (68.4%). Patients were classified as having HF with reduced ejection fraction (HFrEF, 80.7%), HF with preserved ejection fraction (HFpEF, 9.0%), or HF with mildly reduced ejection fraction

(HFmrEF, 10.3%). Guideline-directed medical therapy utilization varied. Beta-blockers had the highest usage (93.2%), followed by mineralocorticoid receptor antagonists (65.7%), angiotensin-converting enzyme inhibitors (39.3%), angiotensin receptor blockers (28.2%), angiotensin receptor-neprilysin inhibitors (16.1%), and sodium-glucose cotransporter-2 inhibitors (8.0%). The study monitored a composite of mortality and HF incidents, revealing incidence rates of 11.74, 12.50, and 8.93 per 100 person-years for the overall, HFrEF, and HFmrEF/HFpEF populations, respectively.

CONCLUSIONS: Despite high guideline-directed medical therapy adherence, the Thai Heart Failure Registry data revealed high mortality and recurrent HF rates. These findings underscore limitations in current HF treatment efficacy. The results indicate the need for further investigation and improvements of HF management to enhance patient outcomes.

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Conflict of interest statement: Declaration of competing interest All authors declare that there are no personal or professional conflicts of interest relating to any aspect of this particular study.

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Author information:

(1)Department of Clinical Pharmacy Practice Pedagogy, Tokushima University Graduate School of Biomedical Sciences, Tokushima, Japan.

(2)Department of Clinical Pharmacology and Therapeutics, Tokushima University Graduate School of Biomedical Sciences, Tokushima, Japan.

(3)Department of Pharmacy, Kochi Medical School Hospital, Kochi, Japan.

(4)Department of Neurosurgery, Kochi Medical School, Kochi University, Nankoku, Japan.

(5)Center of Medical Information Science, Kochi Medical School, Kochi University, Kochi, Japan.

(6)Department of Cardiology and Geriatrics, Kochi Medical School, Kochi University, Kochi, Japan.

(7)Department of Emergency and Disaster Medical, Pharmacy Faculty of Pharmaceutical Sciences, Fukuoka University, Fukuoka, Japan.

(8)Department of Pharmacy, Tokushima University Hospital, Tokushima, Japan.

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METHODS: Demographic, clinical, and pharmacological data from 1,061 patients with acute decompensated HF, enrolled in the Kochi Registry of Subjects with Acute Decompensated Heart Failure (Kochi YOSACOI study), were analyzed to assess their impact on mortality. Additionally, a machine learning approach was applied to complement the conventional statistical model for analysis. Patients with HFrEF (n?=?314) were divided into the all-cause mortality within 2 years group (n?=?80) and the survivor group (n?=?234).

RESULTS: Overall, 41.1% (129/314) of the patients were aged ?80, and 25.5% (80/314) experienced all-cause mortality within 2 years. Furthermore, 57.6% (181/314) and 79.0% (248/314) were prescribed RAS inhibitors and beta-blockers, respectively. Our analysis showed that RAS inhibitor use was associated with reduced all-cause mortality and cardiac death in patients with HFrEF of all ages (P?<?0.001), and beta-blocker use had an interaction with age. Machine learning revealed that the use of beta-blockers altered the risk of mortality, with a threshold of approximately 80 years of age. Beta-blocker use was associated with lower all-cause mortality and cardiac death in patients with HFrEF aged <80 years (P?<?0.001) but not in those aged ?80 years (P?=?0.319 and P?=?0.246, respectively). These results suggest that beta blockers may differ in their all-cause mortality benefits according to age.

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Following Cardiac Surgery.

Schwann AN(1), Jaffe LM(2), Givertz MM(3), Wood KL(4), Engelman DT(5).

Author information:

(1)Department of Internal Medicine, Yale School of Medicine, New Haven, CT, USA.

(2)Heart & Vascular Program, Baystate Health, University of Massachusetts Chan Medical School-Baystate, Springfield, MA, USA.

(3)Division of Cardiovascular Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA.

(4)Division of Cardiac Surgery, University of Rochester Medical Center, Rochester, NY, USA.

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Author information:

(1)Saint Luke's Mid America Heart Institute and University of Missouri-Kansas City, Kansas City, Missouri, USA. Electronic address: mkosiborod@saint-lukes.org.

(2)University Health Network and Mount Sinai Hospital and University of Toronto, Toronto, Ontario, Canada.

(3)St. Michael's Hospital, Toronto, Ontario, Canada.

(4)Cardiovascular Division, Brigham and Women's Hospital, Boston, Massachusetts, USA. Electronic address: https://twitter.com/akshaydesaimd.

(5)Cardiovascular Clinical Trials Academic Research Organization, Hospital Albert Einstein, São Paulo, Brazil.

(6)Semmelweis University, Budapest, Hungary.

(7)The Mount Sinai Hospital, New York, New York, USA.

(8)Hospital Israelita Albert Einstein, São Paulo, Brazil.

(9)Semmelweis Egyetem, Budapest, Hungary.

(10)Hospital Clinico Universitario de Valencia, Valencia, Spain.

(11)University Hospitals of Leicester NHS Trust - Glenfield Hospital, Leicester, United Kingdom.

(12)Section of Cardiovascular Medicine, Yale University, Guilford, Connecticut, USA.

(13)University Hospital Ostrava and Faculty of Medicine, University of Ostrava, Czech Republic.

(14)Institute of Unity Health Toronto and University of Toronto, Toronto, Ontario, Canada.

(15)Department of Electrocardiology, Medical University of Lodz, ?ód?, Poland.

(16)BioPharmaceuticals Medical, AstraZeneca, Gothenburg, Sweden.

(17)BioPharmaceuticals Medical (Evidence), AstraZeneca, Wilmington, Delaware, USA.

(18)Institute of Cardiovascular and Medical Sciences, University of Glasgow, and Glasgow Royal Infirmary, Glasgow, United Kingdom. Electronic address: https://twitter.com/markcpetrie20.

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CONCLUSIONS: REALIZE-K is the first trial to evaluate whether SZC can enable rapid and safe MRA optimization and long-term continuation in patients with HFrEF and prevalent/high risk of hyperkalemia. (Study to Assess Efficacy and Safety of SZC for the Management of High Potassium in Patients with Symptomatic HFrEF Receiving Spironolactone; NCT04676646).

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Conflict of interest statement: Funding Support and Author Disclosures The REALIZE-K trial was funded by AstraZeneca. Drs Kosiborod, Cherney, Connelly,

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CMR characterization of patients with heart failure and left bundle branch block. (2024)

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CMR characterization of patients with heart failure and left bundle branch block.

Tomoaia R(1)(2), Harrison P(1), Bevis L(1), Wahab A(1), Thompson P(1), Saunderson CED(1), Levelt E(1), Dall'Armellina E(1), Garg P(3), Greenwood JP(1), Plein S(1), Swoboda PP(1).

Author information:

(1)Biomedical Imaging Sciences Department, Leeds Institute of Cardiovascular and Metabolic Medicine, University of Leeds, Woodhouse, Leeds, West Yorkshire LS2 9JT, UK.

(2)Cardiology Department, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania.

(3)Department of Cardiovascular and Metabolic Health, Norwich Medical School, University of East Anglia, Norfolk, UK.

AIMS: We aimed to identify the distinctive cardiovascular magnetic resonance (CMR) features of patients with left bundle branch block (LBBB) and heart failure with reduced ejection fraction (HFrEF) of presumed non-ischaemic aetiology. The secondary aim was to determine whether these individuals exhibit characteristics that could potentially serve as predictors of left ventricular ejection fraction (LVEF) recovery as compared with patients without LBBB.

METHODS AND RESULTS: We prospectively recruited patients with HFrEF (LVEF ? 40%) on echocardiography who were referred for early CMR examination. Patients with an established diagnosis of coronary artery disease and known structural or congenital heart disease were excluded. LV recovery was defined as achieving

?10% absolute improvement to ?40% in LVEF between baseline evaluation to CMR. A total of 391 patients were recruited including 115 (29.4%) with LBBB. Compared with HF patients without LBBB, those with LBBB exhibited larger left ventricles and smaller right ventricles, but no differences were observed with respect to LVEF (35.8 ± 12 vs. 38 ± 12%, P = 0.105). The overall rate of LV recovery from baseline echocardiogram to CMR (70 [42-128] days) was not significantly different between LBBB and non-LBBB patients (27.8% vs. 31.5%, P = 0.47). Reduced LVEF remained an independent predictor of LV non-recovery only in patients with LBBB.

CONCLUSION: Patients presenting with HFrEF and LBBB had larger LV cavities and smaller RV cavities than those without LBBB but no difference in prevalence of scar or ischaemia. The rates of LV recovery were similar between both groups, which supports current guidelines to defer device therapy until 3-6 months of guideline-directed medical therapy, rather than early CMR and device implantation.

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Reassessing heart failure therapy in Thailand: Patient insights and treatment outcomes from the Thai heart failure registry. (2024)

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Reassessing heart failure therapy in Thailand: Patient insights and treatment outcomes from the Thai heart failure registry.

Krittayaphong R(1), Yingchoncharoen T(2), Puwanant S(3), Boonyapiphat T(4), Charoenyos N(5), Wongtheptien W(6), Chotenimitkhun R(7), Chichareon P(8), Phrommintikul A(9), Thundee C(10), Chirakarnjanakorn S(11), Ariyachaipanich A(3), Senthong V(12), Kanjanavanich R(9), Buakhamsri A(13), Chantrarat T(14), Ratanasumawong K(7), Songmuang SB(6), Sethalao P(11), Kunjara-Na-Ayudhya R(15).

Author information:

(1)Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand. Electronic address: rungroj.kri@mahidol.ac.th.

(2)Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand.

(3)Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand.

(4)Lampang Hospital, Lampang, Thailand.

(5)Chaophraya Yommarat Hospital, Suphanburi, Thailand.

(6)Chiangrai Prachanukroh Hospital, Chiangrai, Thailand.

(7)Police General Hospital, Bangkok, Thailand.

(8)Faculty of Medicine, Prince of Songkla University, Songkla, Thailand.

(9)Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand.

(10)Surin Hospital, Surin, Thailand.

(11)Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand.

(12)Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand.

(13)Faculty of Medicine, Thammasat University, Pathum Thani, Thailand.

(14)Department of Internal Medicine, Phramongkutklao Hospital, Bangkok, Thailand.

(15)Vichaiyut Hospital and Medical Center, Bangkok, Thailand.

BACKGROUND: This research analyzed the demographics, management, and outcomes of patients with heart failure (HF) in Thailand.

METHODS: The Thai Heart Failure Registry prospectively enrolled patients diagnosed with HF from 36 hospitals in Thailand. Follow-up data were recorded at 6, 12, 18, and 24 months. This study primarily focused on two outcomes: mortality and HF-related hospitalizations.

RESULTS: The study included 2639 patients aged at least 18. Their mean age was 59.2 ± 14.5 years, and most were male (68.4%). Patients were classified as having HF with reduced ejection fraction (HFrEF, 80.7%), HF with preserved ejection fraction (HFpEF, 9.0%), or HF with mildly reduced ejection fraction (HFmrEF, 10.3%). Guideline-directed medical therapy utilization varied. Beta-blockers had the highest usage (93.2%), followed by mineralocorticoid receptor antagonists (65.7%), angiotensin-converting enzyme inhibitors (39.3%), angiotensin receptor blockers (28.2%), angiotensin receptor-neprilysin inhibitors (16.1%), and sodium-glucose cotransporter-2 inhibitors (8.0%). The study monitored a composite of mortality and HF incidents, revealing incidence rates of 11.74, 12.50, and 8.93 per 100 person-years for the overall, HFrEF, and HFmrEF/HFpEF populations, respectively.

CONCLUSIONS: Despite high guideline-directed medical therapy adherence, the Thai Heart Failure Registry data revealed high mortality and recurrent HF rates.

These findings underscore limitations in current HF treatment efficacy. The results indicate the need for further investigation and improvements of HF management to enhance patient outcomes.

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