

Sex-related differences in the optimization of heart failure with reduced ejection fraction therapy: a single centre experience

 **Fran Rode**^{1*},
 **Ana Jordan**¹,
 **Ivan Zeljković**¹,
 **Nikola Pavlović**¹,
 **Ante Lisičić**¹,
 **Aleksandar Blivajs**¹,
 **Vanja Ivanović**¹,
 **Jelena Kursar**¹,
 **Danijela Grizelj**¹,
 **Luka Antolković**¹,
 **Domagoj Kobetić**²,
 **Ivan Skorić**³,
 **Šime Manola**^{1,3},
 **Ivana Jurin**¹

¹Dubrava University Hospital, Zagreb, Croatia

²Pakrac General Hospital and the Croatian Veterans Hospital, Pakrac, Croatia

³University of Zagreb, School of Medicine, Zagreb, Croatia

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***ADDRESS FOR CORRESPONDENCE:** Fran Rode, Klinička bolnica Dubrava, Av. Gojka Šuška 6, HR-10000 Zagreb, Croatia. / Phone: +385-91-9440-330 / Email: fran.rode15@gmail.com

ORCID: Fran Rode, <https://orcid.org/0000-0002-8787-2455> • Ana Jordan, <https://orcid.org/0000-0001-5610-6259>
Ivan Zeljković, <https://orcid.org/0000-0002-4550-4056> • Nikola Pavlović, <https://orcid.org/0000-0001-9187-7681>
Ante Lisičić, <https://orcid.org/0000-0002-4365-9652> • Aleksandar Blivajs, <https://orcid.org/0000-0003-3404-3837>
Vanja Ivanović, <https://orcid.org/0000-0001-6931-5404> • Jelena Kursar, <https://orcid.org/0000-0001-8791-4910>
Danijela Grizelj, <https://orcid.org/0000-0002-8298-7974> • Luka Antolković, <https://orcid.org/0000-0002-5313-2213>
Domagoj Kobetić, <https://orcid.org/0009-0000-2106-4933> • Ivan Skorić, <https://orcid.org/0000-0002-5201-2092>
Šime Manola, <https://orcid.org/0000-0001-6444-2674> • Ivana Jurin, <https://orcid.org/0000-0002-2637-9691>

Introduction: Guideline-directed medical therapy (GDMT) for heart failure with reduced ejection fraction (HFrEF) provides greatest benefit when up-titrated to maximum tolerable doses, therefore an individualized approach to each patient is essential. The differences in GDMT administration between women and men, and its effects on outcomes, have not yet been fully investigated.¹ The aim of this research is to evaluate the difference in HFrEF GDMT up-titration in women and men and its potential effects on the outcomes.

Patients and Methods: This is a prospective cohort study involving patients with HFrEF processed at a single tertiary centre. We evaluated the proportion of maximally titrated GDMT in each female and male group. We also compared the outcomes of all-cause mortality, cardiovascular mortality and heart failure related hospitalizations. Study endpoints were documented via telephone interviews, regular outpatient follow-up, or by electronic hospital records. Continuous variables were compared using Mann Whitney U test and categorical variables were compared with chi squared test.

Results: A total of 507 patients were included, out of which 123 were female. The median follow-up period was 730 days. Female group had significantly lower body weight, less smokers, and more kidney disease. In female vs. male population, evidence-based target doses were reached for 25.2% vs. 28.6% (p=0.46) beta-blockers, 52.8% vs. 68.0% mineralocorticoid receptor antagonists (MRA) (p<0.05), 10.6% vs. 11.5% angiotensin convertase inhibitors (ACEi)/ Angiotensin receptor blockers (ARB)/ angiotensin receptor–neprilysin inhibitors (ARNI), ACEi/ARB/ARNI (p=0.84) and 100% sodium-glucose cotransporter-2 inhibitors (SGLT2i) in both groups. All-cause mortality was 8.13% vs. 10.93% (p=0.79), and cardiovascular mortality was 4.06% vs. 7.03% (p=0.25). Female patients had more heart failure related hospitalizations (65.04% vs. 56.51%, p=0.09).

Conclusion: The female group had a significantly lower proportion of maximally titrated MRAs. It seems that the female group has more frequent heart failure hospitalizations, but short of statistical significance. Significant differences in the characteristics of these two groups prevent us from concluding that the observed outcomes are exclusively sex-related. Additional research should be performed before elaborating a possible connection of the outcomes. Regardless of sex, an individual approach with the goal of reaching maximal tolerable doses of GDMT should be applied to each patient.

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LITERATURE

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