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Dose adaptation of beta-blockers (BB) after acute myocardial infarction

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Introduction

- BB are recommended in all patients after ST-segment Elevation Myocardial Infarction (STEMI) (Class IIa Level B)[1]
- Level of recommendation raises to Class I Level A in patients with reduced Left Ventricular Ejection Fraction (LVEF< 40%)[1]
- In theory, BB should be introduced with a low dose and up-titrated to a target dose equivalent to 200mg of metoprolol

Objectives

Investigate the prescription of BB in a cohort of STEMI patients at discharge and after one-year. We aimed to assess :

1) **BB dose prescription at discharge and;**
2) **Proportion of up-titration, stratified by LVEF<40% or ≥40% groups.**

Methods

Observational study with STEMI patients admitted in CHUV between April 2014 and April 2016

- Assessment of BB prescription at discharge and at one-year (with a follow-up call interview);
- Classification of BB in two categories: low dose (i.e < 50% target dose (=equivalent to metoprolol 200mg)) and high dose (≥ 50% target dose).

Conclusion

- BB are still largely prescribed post-STEMI.
- Large majority of patients with low doses (at discharge and after one-year)
- Doses are mostly low and rarely up-titrated within the year.
- Most patients had no contra-indications for BB prescription nor BB prescription with the target dose
- Results are more worrying for patients with reduced LVEF

Perspectives:

- Implementation of measures for optimization of BB prescription in STEMI patients

- Difference in the proportion of uptitration in the two LVEF subgroups was not statistically significant (p = 0.27).
- Further investigations with multivariate logistic regression showed that a patient with a short length of stay and/or who was shortly transferred to district hospital was at 4 times higher risk not to receive a BB at discharge.
- We hypothesize that practitioners have no time enough to introduce a BB or uptitrate de dose during index hospital stay.

Results and Discussion

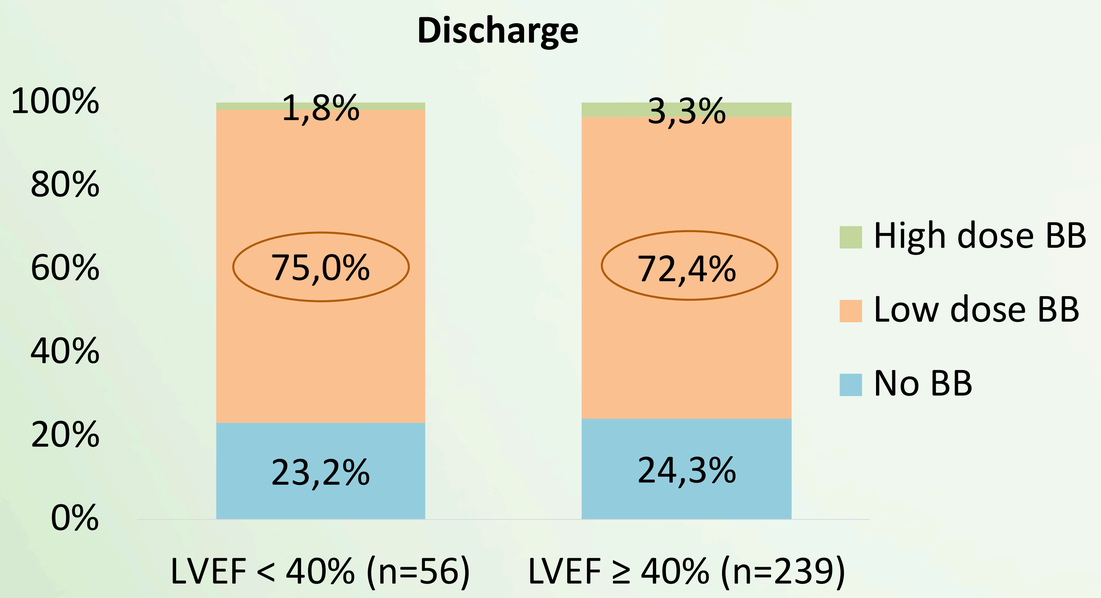

Figure 1: BB prescription at discharge, stratified by LVEF groups (n=295)

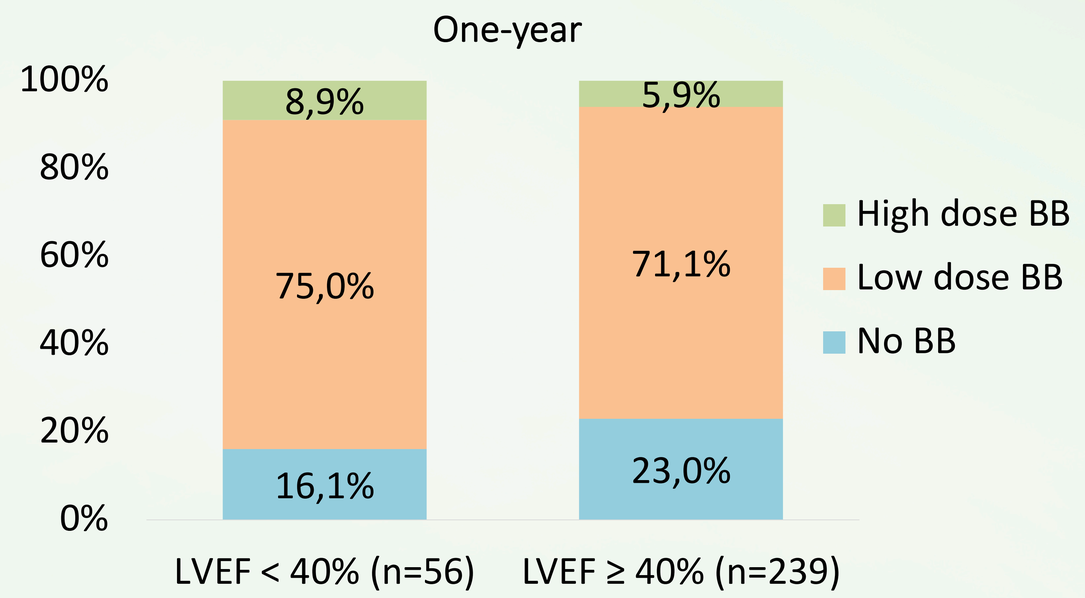

Figure 3: BB prescription at one-year, stratified by LVEF groups (n=295)

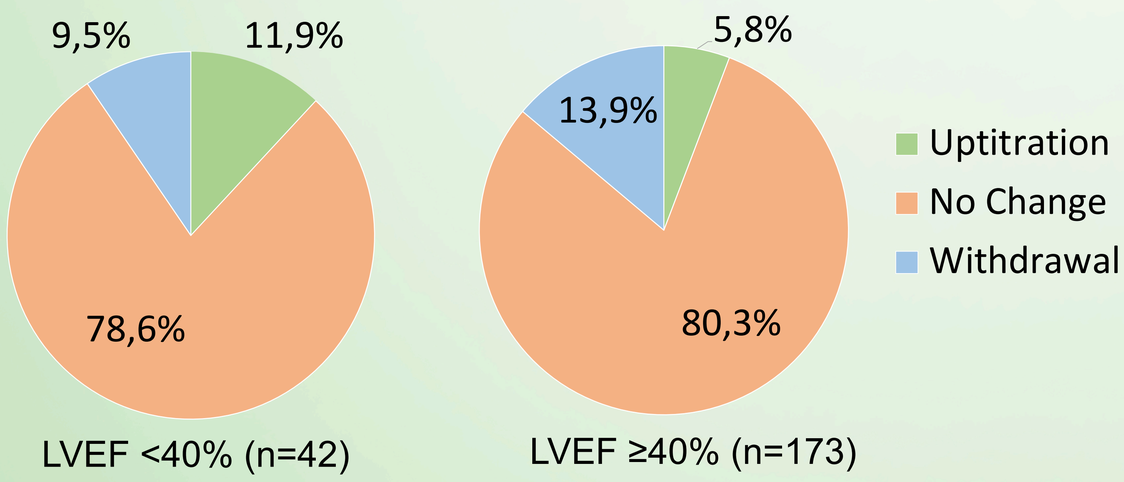

Figure 2: Evolution of the dose within the year in patients discharded with low dose BB, stratified by LVEF function (n=215)

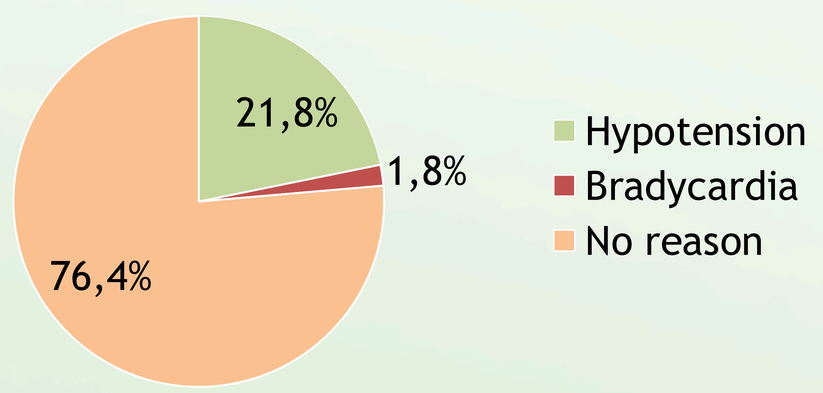

Figure 4: Reasons for low dose BB prescription or no BB prescription at discharge in patients with LVEF <40% (n=55)

References

1. 2017 ESC STEMI guidelines

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