Optimization of heart failure medications

using a remote monitoring program

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Introduction: Numerous studies demonstrated lower mortality, hospitalization rates and slower heart failure (HF) progression associated with optimized HF guideline medication. Unfortunately, treatment is frequently suboptimal due to inappropriate dosing or the absence of key therapeutic classes. Major limiting factors when new medications are initiated, or titration indicated, is the lack of accurate and accessible vital sign and symptom information, as well as communicating the recommendations providing an adequate education.

Telemedicine including remote follow-ups and monitoring tools can help improve the treatment through monitoring of patients, asynchronous communication, patients' symptoms, physical and mental condition, and education, encouraging the patient to meet the treatment goals.

The main objective of the study is to examine the effect of a remote monitoring program that provides the care team with easy access to clinical data.

Methods: A prospective study enrolled 50 patients with symptomatic stable HF, randomizing 34 participants to a 3-month intervention, while the remaining 16 received usual care (HF clinic). In the intervention group the nurse titrated medication based on digitally reported symptoms and vitals automatically transmitted from the patient monitoring devices. Bidirectional secure messaging facilitated efficient asynchronous communication between the care team and patients. Education material and reminders were provided according to a predetermined care plan. The outcome was the percentage of patients attaining guideline-recommended medication and dose attained (% of recommended) for the main HF medications.In the intervention group, the physician and nurse coordinator supervised titration that was facilitated by daily remote monitoring of vital signs, and symptoms using a remote patient monitoring platform (Datos Health).

Results: Patients were 61∓10 years old, mostly male (82%), with an ejection fraction of 30∓7% and an average NYHA of 2.4. After 3 months, patients in the intervention group received more SGLT2 inhibitors (81 vs. 67%; $p<0.01$) and ARNI (75% vs. 60%; $p=0.02$) and at higher ARNI doses (49% and 38% of optimal dose;$p<0.05$) compared to the UC group.
No severe adverse events occurred related to HF medication. Satisfaction in the intervention group was higher and patients were less likely to reduce MRA doses. The use and doses of beta blockers and ACE inhibitors were similar. Patients reported high adherence to the medication plan in both groups.

Conclusion: Remote monitoring of vital signs and symptoms led to higher rates of HF therapy use and at higher doses of some guideline-recommended HF therapy. Digital tools can facilitate communication and education as well as care coordination enabling teams to care for considerable groups of patients.