Feasibility Questionnaire

Registry Of Best Up-titration Strategies in acute Heart Failure (ROBUST-HF): a registry of post-acute heart failure management

Planned patient recruitment start: **3Q2023**

Planned patient recruitment end: **4Q2026**

Number of patients: 3000

PRINCIPAL INVESTIGATOR (PI) INFORMATION:	YOUR ANSWERS
Full Name (First, MI, Last):	
Title (e.g. Director of Cardiology):	
Degree:	
Medical Specialty:	
PI Telephone Number:	
PI Email Address:	

Main Site Contact Information:	YOUR ANSWERS
Main Site Contact Person Name:	
Name of Institution/Clinic:	
Street Address:	
City:	
State:	
Country:	
Zip:	
Main Contact Telephone Number:	
Main Contact Email Address:	

Previous Experience in Clinical Research and Specific HF Research Experience

QUESTIONS	YOUR ANSWERS
Have you performed clinical research in heart failure trials within the last 5 years? If so, please list the Study Names and your enrollment in each trial below:	☐ Yes ☐ No
Study Name:	Number Screened: Number Enrolled:
Study Name:	Number Screened: Number Enrolled:
Study Name:	Number Screened: Number Enrolled:
Have you performed clinical research in acute heart failure or post-acute heart failure trials with enrollment in hospital and out-patient follow-up? If so, please list each Study Name and your enrollment in the trial below:	☐ Yes ☐ No
Study Name:	Number Screened: Number Enrolled:
Study Name:	Number Screened: Number Enrolled:

Acute HF in Your Medical Center/Hospital

QUESTIONS	YOUR ANSWERS
How do patients with Acute HF present to your hospital/clinic?	☐ Ambulance _____% ☐ Emergency room _____% ☐ Clinic referral _____% ☐ Other specific_____ ; ____%
Where in the hospital are pts with AHF admitted?	☐ Emergency room observation unit _____% ☐ Internal medicine _____% ☐ Cardiology _____% ☐ Intensive care unit _____% ☐ Other _____ ; ____%
Do you have an established HF team at your site?	☐ Yes ☐ No If yes, detail: _____
How many patients with AHF do you treat per month?	☐ < 10 ☐ 10 – 20 ☐ 20 – 30 ☐ > 30
What is the length of stay on average for AHF patients in your hospital? Please indicate approximate percentage of patients in each category	☐ < 5 _____ % ☐ 5 – 8 _____ % ☐ 8 - 10 _____ % ☐ 10 – 12 _____ % ☐ 12 – 14 _____ % ☐ > 14 _____ %

Procedures and lab examinations at admission for acute heart failure:

Can you perform these assessments during the first 2-3 days of admission for acute heart failure at your hospital?

QUESTIONS	YOUR ANSWERS
Measure Natriuretic peptides **DURING HOSPITALIZATION** If yes, please specify laboratory equipment used, for example, bed side machine, hospital laboratory, other laboratory in town	☐ Yes ☐ No If yes which type? NTproBNP ☐ Yes ☐ No Equipment used: _____ Location of Laboratory_____ BNP ☐ Yes ☐ No Equipment used: _____ Location of Laboratory_____
If you measure Natriuretic peptides – how many evaluations do you usually do during the whole hospitalization?	☐ 0 ☐ 1 ☐ > 1
Perform Chest X-Ray	☐ Yes ☐ No If yes, is this routinely done (in all patients) at admission? ☐ Yes ☐ No If **NO** what percent of patients have echocardiography + lung ultrasound done during a AHF Admission? _____%
Perform local lab assessments for key biochemistry parameters including potassium, creatinine?	☐ Yes ☐ No

Medications use in patients with acute heart failure at discharge		
ACEi use	What % of Heart failure patients are prescribed any dose of ACEi?	_____%
	From the above reported number, provide percent of patients prescribed (see table below for detail):	Prescribed < 50% of ESC recommended dose ____% Prescribed 50 - 100% of ESC recommended dose ___% Prescribed 100% of the ESC recommended dose ____%
ARB use	What % of Heart failure patients are prescribed any dose of ARB?	_____%
	From the above reported number, provide percent of patients prescribed (see table below for detail):	Prescribed < 50% of ESC recommended dose ____% Prescribed 50 - 100% of ESC recommended dose ___% Prescribed 100% of the ESC recommended dose ____%

ARNi use	What % of Heart failure patients are prescribed any dose of ARNi?	_____%
	From the above reported number, provide percent of patients prescribed (see table below for detail):	Prescribed < 50% of ESC recommended dose ____% Prescribed 50 - 100% of ESC recommended dose ___% Prescribed 100% of the ESC recommended dose ____%
MRA use	What % of Heart failure patients are prescribed any dose of MRA?	_____%
	From the above reported number, provide percent of patients prescribed (see table below for detail):	Prescribed < 50% of ESC recommended dose ____% Prescribed 50 - 100% of ESC recommended dose ___% Prescribed 100% of the ESC recommended dose ____%
Beta Blockers use	What % of Heart failure patients are prescribed any dose of Beta Blockers?	_____%
	From the above reported number, provide percent of patients prescribed (see table below for detail):	Prescribed < 50% of ESC recommended dose ____% Prescribed 50 - 100% of ESC recommended dose ___% Prescribed 100% of the ESC recommended dose ____%
SGLT2 inhibitors	What % of Heart failure patients are prescribed any dose of SGLT2 inhibitors?	_____%
What % of Heart failure patients receive revascularization?		PCI – ____% CABG - ____%
What % of Heart failure patients have ICD and CRT?		ICD – ____% CRT - ____%

Follow up after an Acute HF admission in Your Medical Center/Hospital

Who usually follows the HF patient after discharge from your institution?	☐ Community general physician ☐ Community cardiologist ☐ HF hospital clinic ☐ investigator's clinic
What is the usual timing of the FIRST follow-up appointments? - After 1 week? One month? 3 months?6 months?	1 week ____% 2 weeks ____% 1 Month _____ % 3 Months _____ % > 3 Months _____ %
How many times will a patient be seen after an AHF discharge during the first 3 months?	Enter no. of times _____
How is the contract with the patient undertaken after an AHF admission? Telephone call?	☐ Yes ☐ No How many in first 3 months? _____

Telemedicine? In person visit with Nurse In person Visit with Physician (more than one can apply)	☐ Yes ☐ No How many in first 3 months? _____ ☐ Yes ☐ No How many in first 3 months? _____ ☐ Yes ☐ No How many in first 3 months? _____
Measure Natriuretic peptides **AFTER DISCHARGE** If yes, please specify laboratory equipment used, for example, bed side machine, hospital laboratory, other laboratory in town	☐ Yes ☐ No If yes which type? NTproBNP ☐ Yes ☐ No Equipment used: _____ Location of Laboratory_____ BNP ☐ Yes ☐ No Equipment used: _____ Location of Laboratory_____
If you measure Natriuretic peptides – how many evaluations do you usually do during the 6 months after discharge?	☐ 0 ☐ 1 ☐ > 1
Do you have access in the outpatient clinic to laboratory assessments in a reasonable time frame such that you can modify prescribed treatment if needed?	☐ Yes ☐ No Please detail: _____

Budget requirements

QUESTIONS	YOUR ANSWERS
Please indicate cost foreseen for piloting a post AHF rapid up titration of GDMT	
Will you be able to establish a weekly post AHF clinic in your institution?	☐ Yes ☐ No Detail: _____
What will be the cost for establishing such a clinic per month?	
Could you measure natriuretic peptides during this clinic? What would be the cost per measurement? Will this cost be covered by the hospital?	
Could you measure Potassium and Creatinine in out patient clinic? What will be the cost per measurement? Will this cost be covered by the hospital?	
Would you like to participate in the registry?	☐ Yes ☐ No
If yes, will you be able to perform regulatory submission in your hospital?	☐ Yes ☐ No _____

What would be the cost for such submission?	
Based on the main inclusion/exclusion criteria provided on the last page, resource capabilities and your patient population, how many patients would you be able to enrol into the study per month?	
Do you foresee any difficulties to recruit subjects? If yes, please specify	☐ Yes ☐ No _____
Do you foresee any difficulties in performing follow up visits?	☐ Yes ☐ No If yes, please specify
What would be the cost of Recruiting a patient into the registry and entering the patient's data into an eCRF?	

Staff, site approval requirements and audits

QUESTIONS	YOUR ANSWERS
Please indicate the staff (co-investigator, fellow or study nurses) available to conduct the study with you	
Number of Sub-investigators/fellows:	
Number of Study Coordinators/Nurses:	
Which members of the staff available have participated in previous acute cardiovascular trials?	
Are you familiar with any EDC system and previously have worked with eCRF?	
Are there specific requirements for contracts (like, separate contract for sub investigators)?	
Are there Specific requirements for local EC (like payments, local application form) or submission issues in previous studies?	
Has the PI/site had any Sponsor Audits?	☐ Yes ☐ No
If yes, did the sponsor audit reveal any significant issues or improvements/changes required? If yes, please explain.	☐ Yes ☐ No _____
Based on the main inclusion/exclusion criteria provided on the last page, resource capabilities and your patient	

population, how many patients would you be able to enrol into the study per month?	
Do you foresee any difficulties to recruit subjects? If yes, please specify	☐ Yes ☐ No _____
Do you foresee any difficulties in performing follow p visits?	☐ Yes ☐ No If yes, please specify

ROBUST-HF Summary

ROBUST-HF is a multicenter, international research registry of patients who are about to be discharged from a hospital admission for acute heart failure (AHF). Patients will be enrolled who are not treated with optimal doses of oral medications for HF including renin-angiotensin system inhibitors (RASI), beta-blockers (BB), mineralocorticoid receptor antagonists (MRA), and SGLT-2 inhibitors.

STRONG-HF showed that rapid up-titration of renin-angiotensin inhibitor (RASI), beta-blocker, and mineralocorticoid receptor antagonist (MRA) to full optimal doses within 2 weeks post-discharge from a hospital admission for acute heart failure (AHF), using frequent safety assessments, significantly reduced the 180-day risk of HF readmission or death and significantly increased 90-day quality of life regardless of left ventricular ejection fraction (LVEF). Recent evidence also suggests that initiation of angiotensin-receptor neprilysin inhibitor (ARNI) and SGLT-2 inhibitors close to the time of discharge regardless of LVEF, and iron supplementation where indicated, improve patient prognosis. The main barriers to implementation of this new approach are related to two main issues: first, the need for successive visits during the first weeks after discharge including lab work, and, second, the need to acquire skills to safely up-titrate oral HF medications during the rapid up-titration phase.

In this prospective registry of patients not treated with optimal doses of oral HF medications being discharged from an admission for AHF, ROBUST-HF, data will be collected describing their post-discharge care including the management of their oral HF medications and frequency and content of post-discharge assessments and clinical outcomes through 6 months post discharge. The registry has three main aims:

1. Describe in a multi-national multi-site registry the post-discharge care of patients with AHF, inclusive of number of post-discharge visits and their timing, care providers conducting those visits, medications prescribed to patients, follow-up exams, inclusive of labs and NT-proBNP and finally outcomes during the first 6 months post-discharge.
2. Provide professional education and resources for physicians to accelerate the initiation and up-titration of evidence-based, guideline-directed medical therapies in appropriate patients following AHF hospitalization.
3. Provide hospitals and country leaders information on patterns of care for patients discharged from an admission for acute HF by summarizing and providing benchmark data reports.

Inclusion Criteria

In order to be eligible to participate in this study, an individual must meet all of the following criteria:

1. Admitted to the hospital for acute heart failure (diagnosted by dyspnea at rest and pulmonary congestion on chest X-ray or lung ultrasound) more than 72 hours prior to enrolment.
2. All measures within 24 hours prior to enrolment of systolic blood pressure ≥ 100 mmHg, and of heart rate ≥ 60 bpm.
3. The last measurement during the hospital admission prior to enrollment of serum potassium ≤ 5.0 mEq/L (mmol/L).
4. The last measurement during the hospital admission prior to enrollment of NT-proBNP > 1,500 pg/mL
5. At admission and at the time of enrolment being prescribed: (1) none to < ½ the optimal dose (see section 19) of renin angiotensin system inhibitor (RASi) - angiotensin converting enzyme inhibitor (ACEi), angiotensin receptor blocker (ARB), or angiotensin receptor-

neprilysin inhibitor (ARNI), AND (2) none to < ½ the optimal dose of beta-blocker (BB), AND (3) none to ≤ ½ the optimal dose of mineralocorticoid receptor antagonist (MRA).

6. Written informed consent to participate in the study.

Exclusion Criteria

An individual who meets any of the following criteria will be excluded from participation in this study:

1. Age < 18
2. Myocardial infarction, unstable angina or cardiac surgery, or percutaneous transluminal coronary intervention (PTCI), within 1 month prior to enrolment.
3. Presence at enrolment of any severe valvular stenosis or regurgitation in need of surgical correction.
4. Last measurement during the hospital admission prior to enrollment of eGFR < 30 mL/min/1.73m2 or history of dialysis.
5. Currently enrolled in a clinical study that mandates a schedule of follow-up visits for heart failure, or particular assessments or treatment for heart failure.

Optimal Doses of Oral Heart Failure Medications

Medication generic name	Half dose	Full dose
MRA		
Eplerenone	25 mg q.d.	50 mg q.d.
Spironolactone	25 mg q.d.	50 mg q.d.
Beta-blocker		
Bisoprolol	5 mg q.d.	10 mg q.d.
Carvedilol	25 mg b.i.d.	50 mg b.i.d.
Metoprolol succinate extended-release tablet	100 mg q.d.	200 mg q.d.
Nebivolol	5 mg q.d.	10 mg q.d.
Atenolol	50 mg q.d	100 mg q.d
Betaxolol	10 mg q.d	20 mg q.d
Metoprolol tartrate	50 mg b.i.d	100 mg b.i.d
ACEi		
Captopril	25 mg t.i.d.	50 mg t.i.d.
Enalapril	10 mg b.i.d.	20 mg b.i.d.
Lisinopril	17.5 mg q.d.	35 mg q.d
Ramipril	2.5 mg b.i.d. or 5 mg q.d.	5 mg b.i.d. or 10 mg q.d.
Trandolapril	2 mg q.d.	4 mg q.d.
Perindopril	4 mg q.d.	8 mg q.d.
Fosinopril	20 mg q.d	40 mg q.d
Zofenopril	15 mg b.i.d	30 mg b.i.d
ARB		
Candesartan	16 mg q.d.	32 mg q.d..
Valsartan	80 mg b.i.d.	160 mg b.i.d.
Losartan	75 mg q.d.	150 mg q.d.
Irbesartan	150 mg q.d	300 mg q.d
Telmisartan	15 mg q.d	30 mg q.d
Olmesartan[1]	20 mg q.d.	40 mg q.d.
Azilsartan Medoxomil	40 mg q.d	80 mg q.d
ARNi		
Sacubitril/valsartan (Entresto™)	49/51 mg b.i.d.	97/103 b.i.d.
SGLT-2 Inhibitor		
Dapagliflozin	5 mg q.d.	10 mg q.d.
Empagliflozin	5 mg q.d.	10 mg q.d.