

Original Article

The First Multidisciplinary Heart Failure Clinic in Sudan: A Descriptive Report

Nasrein Elgasim Ahmed¹, Kannan O. Ahmed^{2*}, Samoal Abdelaziz Dafalla¹, Huda Hamid Mohammed Elhassan¹, Mohammed Saeed Al khalifa³, and Anas Bedawi Babiker⁴

¹Ahmed Gasim Cardiac Surgery and Renal Transplantation Center, Khartoum North, Sudan

²Clinical Pharmacy and Pharmacy Practice Department, Faculty of Pharmacy University of Gezira, Wad Medani, Sudan

³Professor of Medicine and Cardiology, College of Medicine, Omdurman Islamic University, Omdurman, Sudan

⁴Royal Care International Hospital, Khartoum, Sudan

Abstract

Outcomes for patients with heart failure (HF) remain suboptimal worldwide, despite the national and international guidelines. A disease management program such as a multidisciplinary (MD) team HF clinic proved to be one of the effective strategies to improve patients' outcomes. In June 2018, the first MD-HF clinic was opened at Ahmed Gasim Cardiac Surgery and Renal Transplantation Center, Khartoum, Sudan. This focused report aims to share our experience and pave the way for such an approach for cardiac and other specialty services that may require MD-specialized clinics. We provide a detailed report of the MD team, structure, facilities, and plans of the HF clinic, which may be considered as a nucleus for an advanced HF program and heart transplant in Sudan.

Corresponding Author:
Kannan O. Ahmed; email:
omerkannan@gmail.com

Received 03 November 2021

Accepted 03 March 2022

Published 31 March 2022

Production and Hosting by
Knowledge E

© Nasrein Elgasim Ahmed et al. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Editor-in-Chief:
Prof. Mohammad A. M. Ibnouf

Keywords: multidisciplinary, heart failure clinic, Sudan

1. Introduction

Despite advances in medical and interventional therapy, heart failure (HF) has significant mortality and a higher rate of hospitalizations. In addition, the prognosis is poor and worse than most cancer types [1]. Moreover, HF is highly prevalent, and globally, 26 million people are suffering from HF, with forecasts for 2030 estimating the prevalence to increase by 25% [2].

To date, there is no national statistic for HF in Sudan in terms of prevalence, incidence, mortality, hospitalization rate, readmission, and total cost. However, limited hospital-based studies have been done [3, 4].

Despite improved survival, reduced hospitalizations, and improved quality of life (QoL) of HF patients with reduced ejection fraction (HFrEF) in clinical trials with novel drugs and devices, in actual practice, the treatment of HFrEF is still suboptimal worldwide [5].

OPEN ACCESS

Disease management programs (DMPs) such as HF clinics are effective in optimizing patients with HF compared to the usual care. Therefore, DMPs are now highly recommended by international guidelines to be practiced in a multidisciplinary (MD) team [1].

This short communication describes the first MD-HF clinic at Ahmed Gasim Cardiac Surgery and Renal Transplantation Center, Khartoum, Sudan.

2. The Premise

The MD-HF clinic was opened on June 14, 2018, at Ahmed Gasim Cardiac Surgery and Renal Transplant Center, established in 1997 in Khartoum, Sudan with 230 beds. The cardiac services include busy cardiology and cardiac surgery departments that accept referrals from around the country.

The clinic operates from the outpatient department of the center. The team is allocated enough room to provide privacy for patients without overlapping care provided from each specialty. Although in the beginning, due to the low number of patients, the clinic operated only for one day, after a month, it started providing services for two days per week with an average of 10–15 patients per day.

3. MD-HF Clinic Goals and Structure

Ahmed Gasim Cardiac Surgery and Renal Transplant Center was established in 1997 in Khartoum, Sudan, and has 230 beds. The cardiac services include busy cardiology and cardiac surgery departments that accept a referral from all around the country [6].

Six units form the cardiology department of the center covering invasive and non-invasive services. Due to the increasing number of patients, the center adopted the policy of specialized clinics, for example, the pacemakers, arrhythmias, anticoagulants, and HF clinics for better patient care.

The main goals of the center are to improve the outcome of patients with HFrEF, promote the concept of MD team and staff competence, establish robust data for audit and research, and act as a nucleus for a more advanced HF program in Sudan.

4. The MD-HF Clinic Team

The MD-HF clinic team comprised of the following members:

- (i) A consultant cardiologist
- (ii) A clinical pharmacy specialist
- (iii) A resident doctor trained in HF
- (iv) A nurse trained in HF
- (v) Dieticians
- (vi) Psychologists
- (vii) Cardiac rehabilitation specialist

5. Equipment and Facilities

Registration to the clinic is made through a computerized system. The patient is admitted with specific referral criteria according to the diagnosis and cause of HFrEF, as shown in Figure 1. The clinic is also supported with a specially designed patient file separate from the hospital file, as each discipline has a separate section to document their workup, plans, and subsequent follow-up for each patient.

The clinic is supported with a booklet written in a simple local language containing information about HF, self-care, HF medications, and tables for daily weight measurement.

The patient undergoes the initial basic investigations including ECG, CXR, and echocardiography plus laboratory indices (CBC, U&E, BNB [when needed]) repeated when required and at least at the optimization of medication.

6. MD-HF Clinic Team Organization

The crucial point in the MD-HF clinic is to nominate the individual role of each MD team member without overlapping, so patients can inspire new modes of handling compared to the usual care.

The cardiac nurse is the first member to welcome patients and check their eligibility for the clinic. Then, the patient meets the rest of the team members, including the doctor, the clinical pharmacists, the dietitian, the cardiac rehabilitator, and the psychologist. Nevertheless, some or all of the team members may need to counsel the patient together for the best possible management plan. Figure 2 illustrates the role of each specialty in the HF clinic.

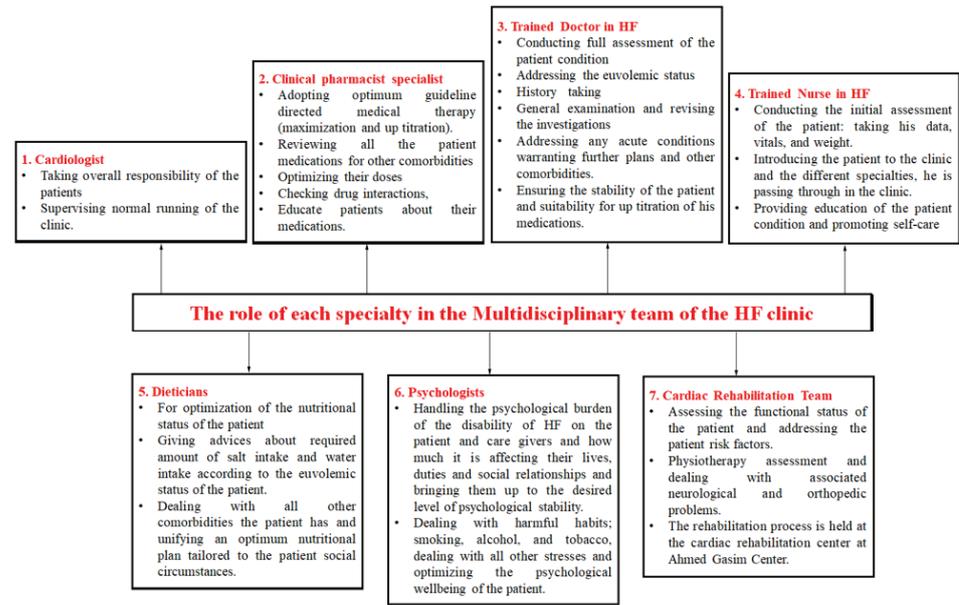


Figure 1: Referral criteria to multidisciplinary heart failure clinic.

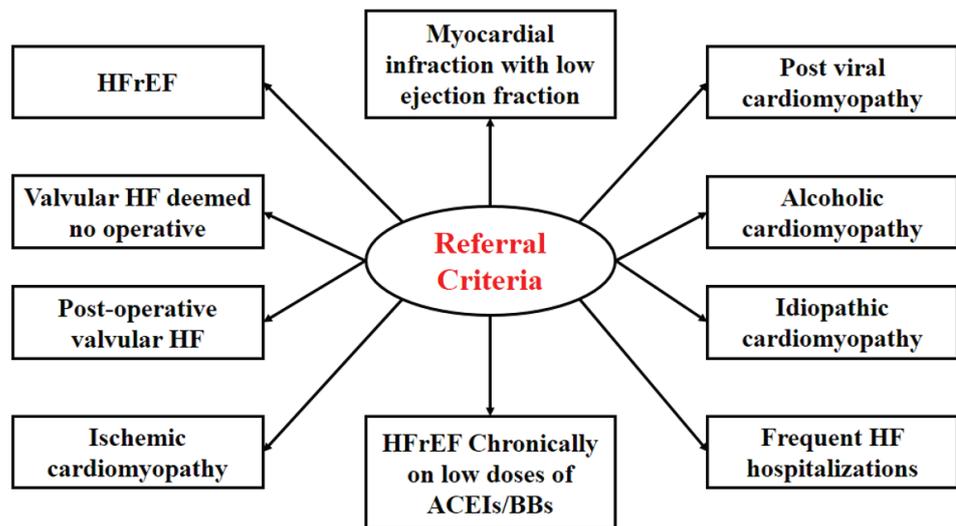


Figure 2: Role of each specialty in multidisciplinary heart failure clinic.

7. Patient's Acceptance Policy

HFrEF patients are managed by their units, and only patients who need further optimization and maximization of medications are accepted in the clinic after a full workup and solving reversible causes of HF. Figure 1 shows the patient referral criteria.

8. What is Different at the HF Clinic Compared to the Usual Care?

Patients will receive adequate pharmacological, nutritional, psychological, and rehabilitation support in one place in orchestral mode. In addition, educational pamphlets and booklet about HF to improve their awareness, compliance, and self-care are provided. A clear decision will be taken on whether further care is needed, for example, Cardiac Resynchronization Therapy (CRT) or Left Ventricular Assist Device (LVAD). After completing the program, the patient will return to their original unit with a clear plan.

9. Future Plans

9.1. For patients (beneficiaries)

- (i) To establish service for inpatients and optimize medication during admission.
- (ii) Homecare team for HF patients with close liaison with the primary healthcare physician and the district nurse.
- (iii) Telemetry follow-ups for the HF clinic through telephone.
- (iv) Online groups (Facebook, Twitter, WhatsApp) to facilitate sharing of knowledge and experience.

9.2. For infrastructure and policies

- (i) To have fully automated machines and available lab tests.
- (ii) Digitalization of the processes and records.

9.3. For growth and development

- (i) To liaise with the Ministry of Health to expand the service to other centers.
- (ii) To establish a certified training program for staff.
- (iii) To expand the program to cover the devices (CRT-P, CRT-D)
- (iv) To liaise with regional LVAD and heart transplantation programs
- (v) Advocacy and publications

Acknowledgements

None.

Competing Interests

None.

Funding

Nil.

References

- [1] Moertl, D., Altenberger, J., Bauer, N., et al. (2017). Disease management programs in chronic heart failure. *Wiener Klinische Wochenschrift*, vol. 129, no. 23–24, pp. 869–878.
- [2] Hale, G. M., Hassan, S. L., Hummel, S. L., et al. (2017). Impact of a pharmacist-managed heart failure postdischarge (bridge) clinic for veterans. *Annals of Pharmacotherapy*, vol. 51, no. 7, pp. 555–562.
- [3] Khalil, S. I., Khalil, S., Albadri, H. K., et al. (Eds.). (2015). Emergence of ischemic cardiomyopathy as the main cause of heart failure in urban Sudanese population. *International Cardiovascular Forum Journal*, vol. 2.
- [4] Suliman, A. (2011). The state of heart disease in Sudan. *Cardiovascular Journal of Africa*, vol. 22, no. 4, p. 191.
- [5] Bhat, S., Kansal, M., Kondos, G. T., et al. (2018). Outcomes of a pharmacist-managed heart failure medication titration assistance clinic. *Annals of Pharmacotherapy*, vol. 52, no. 8, pp. 724–732.
- [6] Ahmed, K. O., Eldin, I. T., Yousif, M., et al. (2021). Clinical pharmacist's intervention to improve medication titration for heart failure: First experience from Sudan. *Integrated Pharmacy Research & Practice*, vol. 10, p. 135.