Acta Scientific Gastrointestinal Disorders (ISSN: 2582-1091)

Volume 7 Issue 3 March 2024

Opinion

The relations between heart failure and gastrointestinal changes

Marcus Cezillo*, Robson Uwagoya and Nicole Maia Dantas

Grupo de Pesquisa e Extensão em Cirurgia-GPEC, São Paulo/SP, Brazil

***Corresponding Author:** Marcus Cezillo, Grupo de Pesquisa e Extensão em Cirurgia-GPEC, São Paulo/SP, Brazil.

DOI: 10.31080/ASGIS.2024.07.0614

Received: February 15, 2024

Published: February 29, 2024

Keywords: Heart Failure; Signs and Symptoms; Digestive; Gastrointestinal Disease

Heart failure (HF) is a syndrome of ventricular dysfunction, in which the heart is unable to pump enough blood to meet the demands of the entire body. It can affect any age group and is often considered the final route for various heart diseases [1].

Data Sus shows that in Brazil, in the year 2022, there were more than 201 thousand hospitalizations for heart failure. In the months between January 2023 and October 2023, the number of hospitalizations was 172,236, which represents approximately 85.35% compared to the previous year. In 2017, 64,3 millions people suffered from heart failure around the world. Based on these values, it is possible to assess the importance of controlling heart failure and its impacts, always aiming to improve patients' quality of life and their prognosis [1].

Some studies have been carried out associating chronic heart failure with signs and symptoms of gastrointestinal abnormalities. This clinical relationship exists as a result of the pathophysiology of HF and its systemic consequences, which would lead to both structural and functional changes in the gastrointestinal tract (GIT) [2].

Among gastrointestinal committal in patients with HF include

- **Edema of the absorptive mucosa:** Due to the swelling of the contact surface of the GIT organs, one of the main consequences is the malabsorption of nutrients. Furthermore, edema together with hypoperfusion caused by reductions in cardiac output can lead to intestinal ischemia, causing injury and pain to the patient.
- **Intestinal bacterial overgrowth:** Excessive growth of bacteria and microbiota imbalance (dysbiosis) are capable of generating malabsorption and diarrhea.
- **Cardiac cachexia:** Severe malnutrition syndrome that occurs in patients with HF. Considered as a predictor of severity and reduced survival.
- **Activation of the systemic inflammatory response:** HF appears to be a complex syndrome that also involves the immune system. The causes of inflammatory mechanisms include hypoxemia and tissue hypoperfusion, stimulation by microbial agents (endotoxins), hemodynamic overload, among others.
- **Anemia:** Due to the reduced food intake of patients with HF and the significant reduction in intestinal absorption, the main form of associated anemia is iron deficiency.

Based on the changes listed, patients with heart failure and gastrointestinal involvement may present to the emergency room with different conditions, including acute obstructive abdomen, which, despite being uncommon, is extremely relevant as its progression can trigger a series of clinical events [3].

The signs and symptoms that the patient may report will depend on several factors such as the location, duration of obstruction, suffering or not of the loop, presence or absence of perforation, degree of contamination and the patient's previous clinical condition. Some of the manifestations that can be reported are: colicky abdominal pain, nausea and vomiting, bloating, intestinal constipation, difficulty eliminating gasses and so on [3].

The management of these patients must be carried out with due history and physical examination, always understanding the patient's clinical history and history with heart failure. Furthermore, complementary laboratory and imaging tests can rule out differential diagnoses and help prepare for the preoperative period; although, sometimes, there will not be a mechanical obstruction as such, but rather changes resulting from the patient's chronic HF, which must be treated appropriately [3].

Although permanent care is adopted for interventions for patients with heart failure, there are few empirical studies documenting truly effective therapies for the gastrointestinal changes that the disease can cause [4].

Possible treatment targets include early nutritional therapy and supplementation (if necessary), diuretic therapy, neurohormonal blockade and immunomodulators that are still under experimental investigation. In addition, of course, to the therapeutic planning that must already be established for the proper monitoring of heart failure and the combination with non-drug measures, such as the practice of physical activities and good lifestyle habits [4].

Finally, it is imperative that there is improvement in the literature on the topic described here, so that new and superior treatments are carried out for patients with heart failure and its consequences.

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