

Role and Effective Therapeutic Target of Gut Microbiota in Heart Failure

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Keywords: Microbiota • Heart failure • Angiotensin receptor blockers

Editorial

Despite the fact that the mechanism of heart failure's formation and progression has been studied extensively over the last ten years, heart failure's mortality and readmission rates remain high. Gut microbiota has been linked to a number of cardiovascular disorders in recent studies, with the study of gut microbiota and heart failure attracting particular interest. As a result, better understanding the function of gut microbiota in the formation and progression of heart failure would aid our understanding of the disease's pathophysiology and bring novel therapeutic options. Heart failure is a severe and fatal stage of many cardiovascular diseases, and it is an important aspect of global cardiovascular disease prevention and treatment. According to epidemiological data, the prevalence of heart failure in adults ranges from 1% to 2%, and it rises to more than 10% in those over the age of 70. As the population ages, chronic diseases such as coronary heart disease, hypertension, diabetes, and obesity become more common. As medical technology improves, patients with heart disease have longer survival times, leading in an increase in the prevalence of heart failure. Heart failure is a challenging clinical illness that results from a range of aberrant alterations in heart structure and function, culminating in ventricular systolic and/or diastolic function problems. Heart failure is now thought to be a chronic, progressive disease in which the activation of the neuroendocrine system

causes abnormal myocardial remodelling, which is a key element in the onset and progression of heart failure. Many medicines, such as beta-blockers, angiotensin-converting enzyme inhibitors and Angiotensin Receptor Blockers (ARB), aldosterone antagonists, and combinations of ARB/nephrilysin blockers, are employed in current medical treatment Ivabradine. Current medicines, however, only target a subset of the hypothesised pathophysiological pathways, the general prognosis for heart failure remains poor, readmission rates and mortality rates remain high, and even in the PARADIGM study, the trial group's 2-year mortality rate was as high as 20%. Patients with heart failure have a poor quality of life, and long-term medicine comes at a high financial cost. As a result, heart failure prevention, early diagnosis, and treatment are critical for successful mortality reduction and prognosis. The gut microbiota is a unique ecosystem that acts as an endocrine organ, producing a variety of metabolism-dependent and metabolism-independent signals that play regulatory roles in the development of cardiovascular disease in the host. As increasing research reveal that gut microbiota is linked to the formation and progression of heart failure, microbiota is predicted to become an important target for heart failure treatments.

How to cite this article: Ricardas Radisauskas. "Role and Effective Therapeutic Target of Gut Microbiota in Heart Failure." *J Coron Heart Dis* 5 (2021): 126.

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Received 07 July 2020; **Accepted** 17 July 2021; **Published** 25 July 2021