

Detailed assessment of heart failure identifies patients needing pacemaker treatment (CRT)

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By measuring how synchronised the heart chambers work together, it is possible to identify which patients with heart failure who benefit from pacemaker therapy, and which ones who do not. This is presented in a thesis to be defended by Gani Bajraktari on 10 June at Umeå University in Sweden.

Heart failure is not only a health problem for the patient but also an economic problem for society, since a large proportion of the patients have persistent symptoms like shortness of breath, fatigue, swollen legs, etc., despite that they receive treatment. Many patients get resynchronisation treatment, CRT, which means that an advanced pacemaker, which sends small, undetectable electrical impulses to both lower chambers of the heart, helps them to beat together in a more synchronized pattern. This improves the heart's ability to pump blood and oxygen to the body.

CRT treatment increases survival among these patients and provides in many cases a good result, but despite this, nearly 30 percent of the patients do not respond favourably. Identifying those patients has been a subject of interest for many years, but so far, research has only shown modest results.

Gani Bajraktari has studied the usefulness of measuring total isovolumic time, t- IVT, which is a measure of the short time during the heart cycle,

during which the ventricle is neither filling or ejection blood.

His thesis shows that t-IVT is a significant independent factor for the patient's exercise capacity, clinical well-being and response to CRT. This result is independent of whether the patient has [heart failure](#) or not, the heart's pumping capacity, and presence of atrial fibrillation. By using t-IVT to identify patients likely to benefit from treatment with CRT, Gani Bajraktari considers that it is possible to optimise the selection of patients, protecting patients from unnecessary high-risk treatment and also reduce the cost of this treatment.

"The thesis shows that there is great value in measuring t-IVT using echocardiography in clinical practice," says Gani Bajraktari. "It's very important to measure t-IVT as it makes it possible to identify which patients with heart failure who benefit from resynchronization [treatment](#) and which who do not benefit. Today, far too many [patients](#) are getting CRT without detectable benefit."

More information: The dissertation is available online: [umu.diva-portal.org/smash/reco ... jsf?pid=diva2:718105](http://umu.diva-portal.org/smash/reco...jsf?pid=diva2:718105)

Provided by Umea University

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