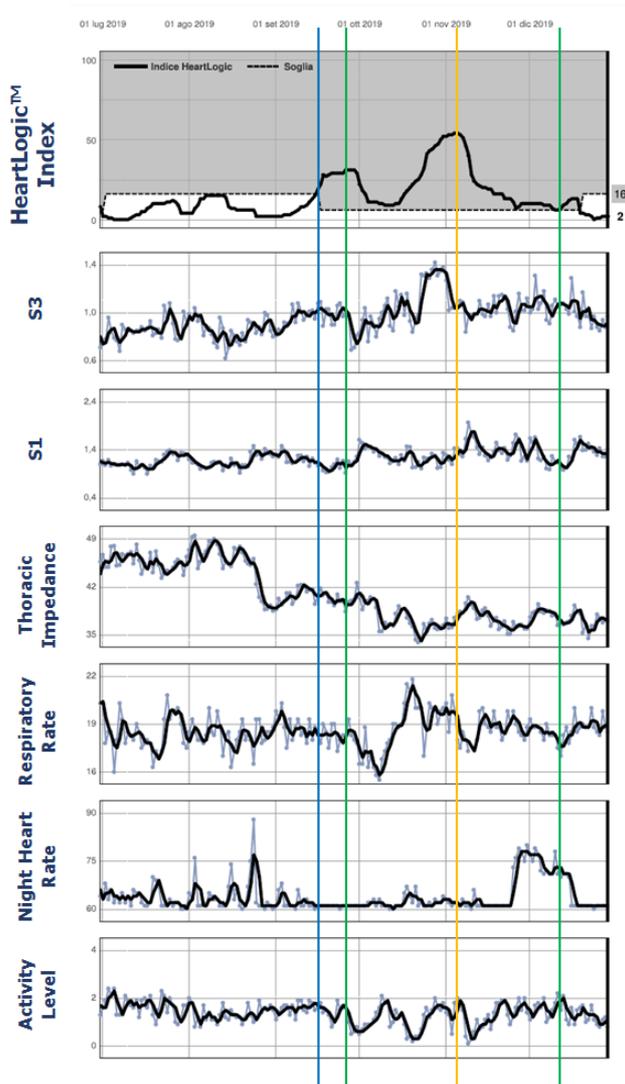


## Case Of The Month #3\_2020

A 75-year-old man with ischemic cardiomyopathy, 25% ejection fraction, left bundle-branch block and paroxysmal atrial fibrillation underwent implantation of a CRT-D device for secondary prevention of sudden death on September 11th, 2018. The HeartLogic™ index was activated at the time of implantation



On September 16<sup>th</sup>, 2019 an HeartLogic™ alert was notified to the center (blue line). The nurse called the patient twice (16<sup>th</sup> and 23<sup>rd</sup> of September) and he reported no signs or symptoms of HF, but few days later, during a scheduled in-office visit, third heart sound and pulmonary stasis were detected at examination.

The patient was hospitalized on September 27<sup>th</sup> for a scheduled Levosimendan cycle (first green line).

At echo evaluation, a moderate-severe mitral insufficiency was observed and a NT-proBNP value of 8441 pg/mL was measured. According to these findings, the patient received an intravenous diuretic therapy.

One week later the NT-proBNP value was 5275 pg/mL and the body weight declined by 3 Kg, with an improvement in the reported status.

The patient underwent Mitraclip implantation and Left Atrial Appendage Closure (Watchman device) on November 8<sup>th</sup>, 2019 (yellow line). The surgery procedures were successful and, at echo evaluation, the mitral regurgitation degree was mild-to-moderate.

On December 13<sup>th</sup>, 2019 (second green line), during a HF scheduled visit, the patient reported dyspnea on effort and a mild hepatomegaly was detected at objective evaluation. The NT-proBNP value was 6728 pg/mL. The physician decided to increase the diuretic therapy and one week later the alert was resolved.

The analysis of the trends showed that before the HeartLogic™ alert an increase in third heart sound and marked decrease in thoracic impedance occurred: these trends are in line with the heart sound auscultation and pulmonary stasis detected at in-office visit. After Levosimendan cycle a rapid decrease in HeartLogic™ index was observed. Before the valve surgery, the HeartLogic™ index increased, mainly driven by third heart sound and respiratory rate: these two parameters are correlated to the main sign and symptoms of mitral disease (third heart sound and dyspnea).

This case highlights three main points:

- the ability of HeartLogic™ to detect early worsening in heart failure status, even in absence of signs and symptoms;
- the HeartLogic™ was good also in detecting valve disease and was able to recognize when mitral function was restored through a marked change in its trend after valve surgery;
- in agreement with Gardner et al (1), this case highlights also the association between the HeartLogic index and the NT-proBNP value.

**Courtesy of Fondazione Poliambulanza, Brescia (ITALY)**

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