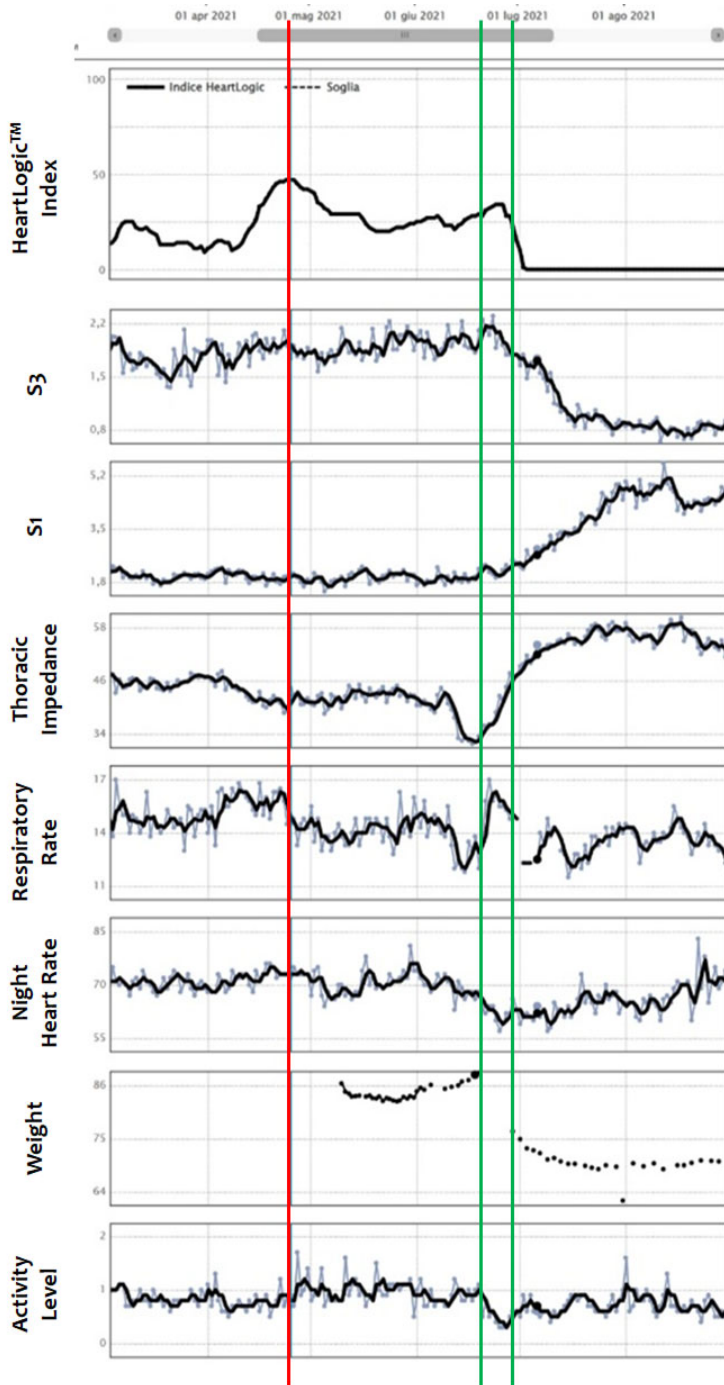


## Case Of The Month #1 2022

A 58-year old man with dilated cardiomyopathy and 25% LVEF, type II diabetes mellitus, moderated chronic kidney disease, arteriopathy and optimized drug therapy, underwent a Vigilant EL single-chamber ICD implantation in March 2019. The HeartLogic diagnostic algorithm was activated in September 2021.



After HeartLogic activation, a retrospective analysis of the sensor trends collected in the months before has been performed.

This evaluation showed a marked increase of the HeartLogic index starting in mid April 2021. The maximum value of 47 was reached at the end of April (red line). The index remained above the threshold until the end of June, when a sudden decrease was observed.

The evaluation of the patient clinical history revealed that the patient was hospitalized for a congestive heart failure event from June 21<sup>st</sup> to June 28<sup>th</sup> (green lines). At the admission he reported dyspnea, ascites and edemas.

During hospital stay, the patient underwent intravenous diuretic therapy.

After therapy administration the patient reported an improvement in symptoms. Multiple sensor trends showed improvement: a marked decrease in HeartLogic and in S3 value, Increase in S1 and thoracic impedance and decrease in respiratory rate.

When at home, the patient was using the automatic weighing scale connected to the LATITUDE system. Before hospitalization the patient's weight was 88 kg (consistently above 80 Kg from early May), while at discharge the weight was 69 Kg: 19 Kg lost during the 5-days hospitalization.

On June 30<sup>th</sup> the HeartLogic index reached the zero value and the patient was fine.

The analysis of trends showed abnormal values of all sensors from the beginning of the recording: HeartLogic above the nominal threshold (16), high level of S3 and respiratory rate, low level of S1 and thoracic impedance. The HeartLogic alert was off, so the physician could not receive warnings about the HF worsening of patient. Immediately after intravenous diuretic therapy administration, marked changes in all sensor trends were observed: decrease in S3, respiratory rate and night heart rate values, and increase in S1 and thoracic impedance values. Very interesting is the trend of the body weight automatically collected in the LATITUDE platform. The system recorded a considerable decrease in body weight after diuretic therapy administration, together with a relevant increase in thoracic impedance, i.e. an additional measure of fluid overload.

This case highlights the ability of HeartLogic in early detecting worsening of heart failure status even in the absence of significant signs and symptoms. This information may help physicians in implementing early clinical actions and possibly in avoiding further decompensation. This example also shows the importance of a multiparametric approach for the assessment of the heart failure patient status. Indeed, multiple sensors seemed to indicate the worsening of the clinical condition and the improvement obtained after adequate treatment.

*“Courtesy of “Policlinico Federico II” Hopital (Naples – ITALY)”*

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