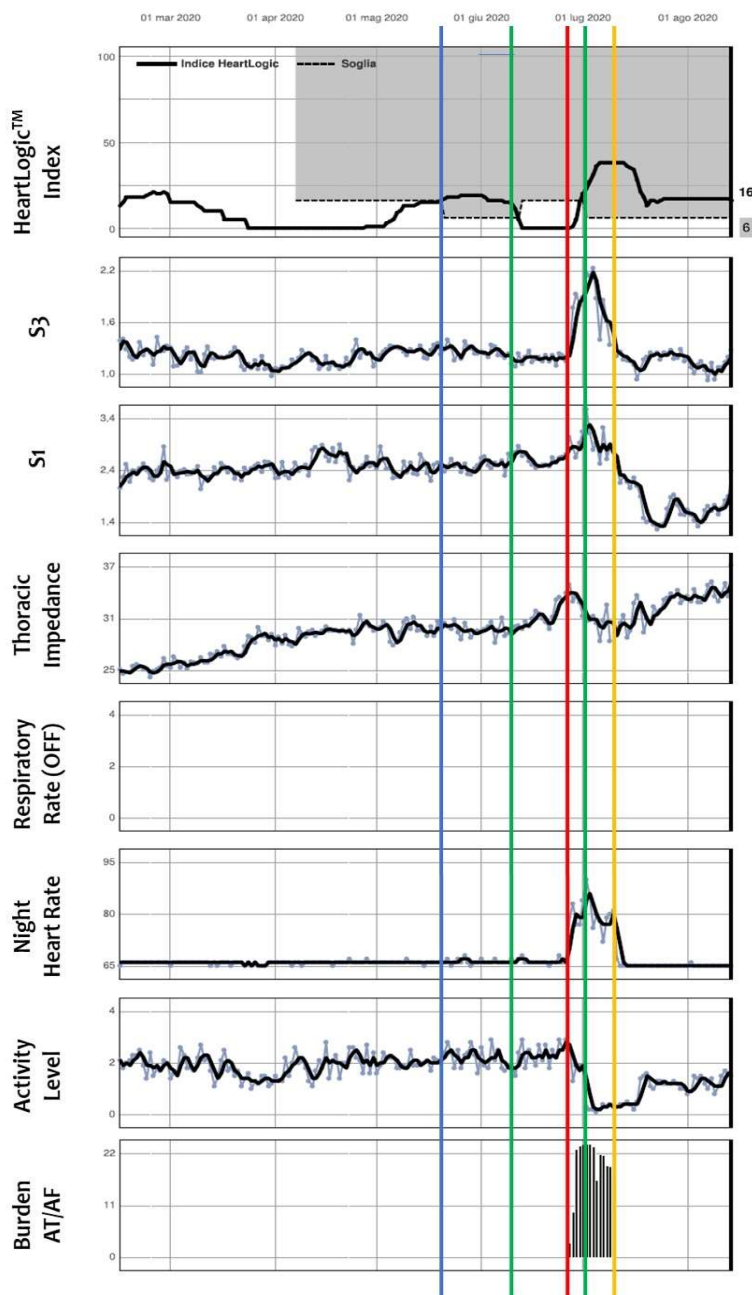


Case Of The Month #4_2021

A 75 years old man with non-ischemic dilated cardiomyopathy and paroxysmal atrial fibrillation implanted with ICD for primary prevention of sudden cardiac death, was admitted for heart failure in August 2018. Left bundle branch block was diagnosed and the patient underwent the upgrade to cardiac resynchronization therapy defibrillator (Resonate X4 CRT-D).

The HeartLogic algorithm was activated at the beginning of April 2020 and the patient remained stable for the following month.



On May 20th 2020 (blue line) HeartLogic triggered an alert and at the phone contact the patient reported to be symptomatic for dyspnea: the physician decided to increase the furosemide dosage (from 150 mg to 200 mg).

Immediately after the therapy change, the HeartLogic alert was solved (first green line).

No events were reported until the 1st of July (second green line) when HeartLogic and atrial fibrillation alerts were notified. According to the graphs, atrial fibrillation started a few days before (red line) and was still present, as suggested by EGMs. Accordingly, the patient was contacted by phone and invited to go to the ER where the diagnosis of new-onset atrial fibrillation was confirmed with an ECG. As signs and symptoms of heart failure were present, the patient was admitted to the hospital. During hospitalization the patient underwent a successful cardioversion on July 10th (yellow line) with sinus rhythm restoration.

During hospitalization amiodarone therapy was started and the diuretic therapy was increased, from 150 mg to 175 mg, as in the previous weeks the cardiologist had suggested the patient to reduce the dosage after symptoms onset.

The patient was discharged on 18th July in good clinical conditions.

The HeartLogic index decreased after the hospitalization, remained stable for a brief period, and then crossed the recovery threshold in mid - August.

The analysis of trends showed that the first HeartLogic alert was driven mainly by heart sounds changes. The remote drug adjustment provided a rapid alert and symptoms resolution.

This case highlights the ability of HeartLogic to early detect worsening of heart failure, even in the presence of minor changes of single parameters, thanks to the multiparametric approach that combines different aspects of HF disease.

The second alert occurred after atrial fibrillation onset that generated marked and sudden increase in third heart sound and night heart rate (due to rapid ventricular conduction) and decrease in activity level. The cardioversion allowed to promptly restore the sinus rhythm, to reduce the patient symptoms and to normalize the sensor trends values. The HeartLogic index showed a sudden increase after AF onset and provided a timely detection of the consequences of AF on cardiac function and functional status.

Courtesy of Azienda Ospedaliera Universitaria di Padova (Padova - ITALY)

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