the HeartLogic index crossed the threshold value (set by default to 16) 28 times in 16 patients. HeartLogic alerts were associated with 6 HF hospitalizations and 6 unplanned in-office visits for HF. Six additional HeartLogic threshold crossings were not associated with overt HF events, but occurred at the time of changes in drug therapy or of other clinical events. The remaining 10 alerts remained unexplained (36%). The median time spent in alert was longer in the case of HF hospitalizations than of in-office visits (89 [min-max: 39–155] days versus 28 [min-max: 5–105] days). The maximum HeartLogic index value was 39±19 in the case of hospitalizations and 24±7 in that of minor HF events.

Conclusions: Our analysis show the association between HeartLogic alerts and HF-related clinical events. HeartLogic alerts were associated not only with HF hospitalizations, but also with minor events of HF decompensation or changes in prescribed HF therapy. Minor events resulted in shorter duration of the alert state and lower index value.

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Preliminary results of the Spanish multicentric HeartLogic (RE-HEART) Registry: adoption of an alert-based heart failure management approach

J Javier De Juan Baguda[1]; JJ Gavira Gomez[2]; M Pachon Iglesias[3]; O Gonzalez Fernandez[4]; V Martinez Mateo[5]; V Escolar Perez[6]; N Perez Castellano[7]; R Cozar Leon[8]; B Diaz Molina[9]; GL Alonso Salinas[10]; JM Medina Gil[11]; P Sanchez-Aguilera Sanchez-Paulete[3]; C Briz De Felipe[12]; F Arribas Ynsaurriaga[1]; R Salguero Bodes[1]; *[1]UNIVERSITY HOSPITAL 12 DE OCTUBRE - MADRID HEALTH SERVICE, Madrid, Spain*; *[2]UNIVERSITY OF NAVARRA CLINIC, Cardiology, Pamplona, Spain*; *[3]Hospital Virgen de la Salud, Cardiology, Toledo, Spain*; *[4]University Hospital La Paz, Cardiology, Madrid, Spain*; *[5]General Hospital La Mancha Centro, Cardiology, Ciudad Real, Spain*; *[6]Hospital de Basurto, Cardiology, Bilbao, Spain*; *[7]Hospital Clinico San Carlos, Cardiology, Madrid, Spain*; *[8]University Hospital of Virgen Macarena, Cardiology, Seville, Spain*; *[9]University Hospital Central de Asturias, Cardiology, Oviedo, Spain*; *[10]University Hospital Ramon y Cajal de Madrid, Cardiology, Madrid, Spain*; *[11]University Hospital Insular of Gran Canaria, Cardiology, Las Palmas De Gran Canaria, Spain*; *[12]Boston Scientific, Madrid, Spain*;

On behalf of: RE-HEART Registry Team

Background: The HeartLogic algorithm combines multiple implantable cardioverter-defibrillator (ICD)-based sensors into an index for prediction of impending heart failure (HF) decompensation. We analyzed the adoption of HeartLogic alert in the clinical practice of 12 centers.

Methods: HeartLogic algorithm was activated in 150 patients (69±10 years old, 80% male, 56% with ischemic cardiomyopathy) with ICD (28%) or and cardiac resynchronization therapy ICD (72%). We analyzed the clinical events occurred after HeartLogic activation and clinical actions taken in response to alerts.

Results: After HeartLogic activation, 35 alerts were reported in 23 patients. Twenty-two (63%) alerts were associated with multiple HF- or non-HF related conditions or changes in prescribed HF therapy. The actions triggered by these alerts were: HF hospitalization (2), diuretics increase (7), change in other cardiovascular drugs (4), device reprogramming (1), atrial fibrillation ablation (1), patient education on therapy adherence (1). The remaining 13 alerts remained unexplained and were not followed by any clinical action. These alerts were managed remotely (device data review and phone contact), except for one alert that generated an unscheduled in-office visit. HeartLogic contributing sensors detected changes mainly in heart sound amplitude (increased third sound and decreased first sound) in 85% of alerts, thoracic impedance decreased in 24%, respiratory rate changed in 12%, night heart rate in 6%.

Conclusions: relevant clinical conditions were remotely detected using HeartLogic alert. The adoption of the alerting system allowed to remotely implement clinical actions. Among the sensed parameters that contribute to the calculation of the index, accelerometer-based heart sounds seemed to be the most sensitive.

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Prospective evaluation of the Multisensor ICD Algorithm for Heart Failure Monitoring

V E Santobuono[1]; A D'onofrio[2]; A Dello Russo[3]; L Calo[4]; F Ammirati[5]; D Pecora[6]; S Favale[1]; B Petracci[7]; A Costa[8]; V Bianchi[2]; F Guerra[3]; E De Ruvo[4]; C La Greca[6]; S Sergio Valsecchi[9]; L Santini[5]; *[1]University of Bari, Bari, Italy*; *[2] AO dei Colli-Monaldi Hospital, Naples, Italy*; *[3]Marche Polytechnic University of Ancona, Ancona, Italy*; *[4]Polyclinic Casilino of Rome, Rome, Italy*; *[5]G. B. GRAssI Hospital, Rome, Italy*; *[6]Poliambulanza Foundation Hospital Institute of Brescia, Brescia, Italy*; *[7]Policlinic Foundation San Matteo IRCCS, Pavia, Italy*; *[8]Sacred Heart Hospital of Negrar, Negrar, Italy*; *[9]Boston Scientific, Milan, Italy*;

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Background: The HeartLogic algorithm measures data from multiple implantable cardioverter-defibrillator-based sensors and combines them into a single index. The associated alert has proved to be a sensitive and timely predictor of impending heart failure (HF) decompensation.

Objective: To describe a multicenter experience of remote HF management by means of HeartLogic and appraise the value of an alert-based follow-up strategy.

Methods: HeartLogic was activated in 104 patients. All patients were followed up according to a standardized protocol that included remote data reviews and patient phone contacts every month and at the time of HeartLogic alerts. In-office examinations were performed every 6 months or when deemed necessary.

Results: During a median follow-up of 13 [10-16] months, the overall number of HF hospitalizations was 16 (rate 0.15 hospitalizations/patient-year) and 100 HeartLogic alerts were reported in 53 patients. Sixty alerts were judged clinically meaningful, and were associated with multiple HF-related conditions. In 48 of the 60 alerts, the clinician was not previously aware of the condition. Of these 48 alerts, 43 triggered clinical actions. The rate of alerts judged non-clinically meaningful was 0.37/patient-year, and the rate of hospitalizations not associated with an alert was 0.05/patient-year. Centers performed remote follow-up assessments of 1113 scheduled monthly transmissions (10.3/patient-year) and 100 alerts (0.93/patient-year). Monthly remote data review allowed to detect 11 (1%) HF events requiring clinical actions (versus 43% actionable alerts, p<0.001).

Conclusions: HeartLogic allowed relevant HF-related clinical conditions to be identified remotely and enabled effective clinical actions to be taken; the rates of unexplained alerts and undetected HF events were low. An alert-based management strategy seemed more efficient than a scheduled monthly remote follow-up scheme.

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The HERMeS Trial (Heart failure Events reduction with Remote Monitoring and eHealth Support): study design and description of intervention

S Yun Viladomat[1]; C Enjuanes Grau[1]; E Calero Molina[1]; E Hidalgo Quiros[1]; P Llacer Iborra[2]; M Cobo Marcos[3]; JM Garcia Pinilla[4]; A Gonzalez-Franco[5]; JL Morales-Rull[6]; C Delso Gafarot[7]; J Nunez Villota[8]; P Beltran Troncoso[9]; R Freixa Pamias[10]; X Corbella Viros[1]; J Comin-Colet[1]; *[1]UNIVERSITY HOSPITAL OF BELLVITGE, Cardiovascular Diseases Research Group Bellvitge Biomedical Research Institute (IDIBELL), Hospitalet De Llobregat, Spain*; *[2]Hospital de Manises, Instituto de Investigación Sanitaria La Fe, Valencia, Spain*; *[3]University Hospital Puerta de Hierro Majadahonda, Fundación para la Investigación Biomédica, Madrid, Spain*; *[4]UNIVERSITY HOSPITAL VIRGEN DE LA VICTORIA, Instituto de Investigación Biomédica de Málaga (IBIMA), Malaga, Spain*; *[5]University Hospital Central de Asturias, Fundación para la Investigación y la Innovación Biosanitaria en Asturias (FINBA), Oviedo, Spain*; *[6]Hospital Arnau de Vilanova, Institut de Recerca Biomèdica de Lleida (IRBLleida), Lleida, Spain*; *[7]Chronic Care Teams. Primary Care, SAP Delta, Hospitalet De Llobregat, Spain, IDIAP Jordi Gol, Hospitalet de Llobregat, Spain*; *[8]University Clinical Hospital of Valencia, Valencia, Spain, Instituto de Investigación Sanitaria de Valencia (INCLIVA), Valencia, Spain*; *[9]Hospital de Viladecans, Viladecans, Spain, Bellvitge Biomedical Research Institute (IDIBELL), Viladecans, Spain*; *[10]Hospital Sant Joan Despi Moises Broggi, Bellvitge Biomedical Research Institute (IDIBELL), Sant Joan Despi (Barcelona), Spain*;

Background/Aims: the role of telemedicine (TM) in patients recently admitted for heart failure (HF) is not well established. In recent years there has been a real revolution in the health field with the emergence of eHealth. In this context, a subtype within eHealth such as mobile health (mHealth), which uses mobile and wireless technologies in the field of health, can play a very relevant role in the monitoring of HF patients. The aim of our study is to assess the impact on cardiovascular (CV) mortality and non-fatal HF events of a TM – based comprehensive management program (based in mHealth) in patients recently admitted for HF and compare the results with the usual comprehensive HF care (UC) strategy in the basis of face-to-face on-site visits at the vulnerable post-discharge phase.

The PIRENe Platform

Methodology: we designed a 24-week multicentre, prospective, randomized, controlled, open-label, blinded end-point adjudication trial to assess the effect on CV

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