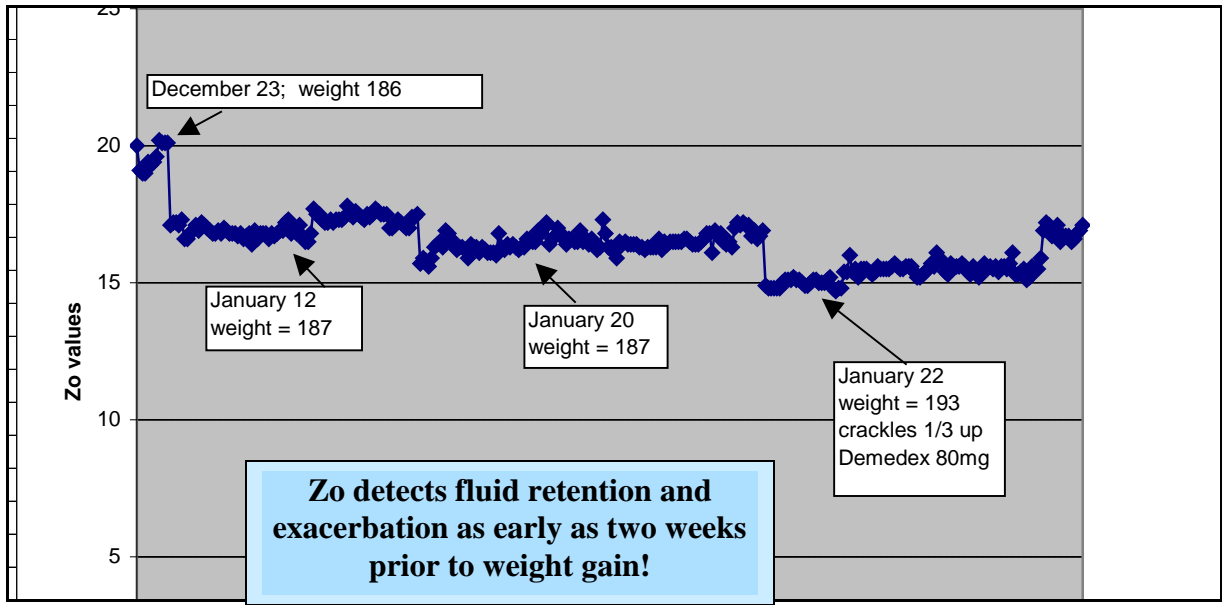


Case Study

Insert Case Study

Zo: Early Indicator of Fluid Status Changes in Heart Failure

Paul is a 68 y/o male, diagnosed with left ventricular systolic heart failure. He has been receiving inotropic infusion therapy twice per week for the last four months. In a blinded study the IQ Noninvasive Hemodynamic Surveillance Computer was utilized to measure his response to therapy. In retrospect, the Zo (base impedance) indicates early decompensation over the course of three weeks. The patient had no weight gain, clear lung sounds, normal vital signs, no early signs or symptoms of exacerbation and no change in self report assessment until January 21. On January 21 the patient called the clinic stating that, "he did not get the same kick" post infusion therapy as usual. When the patient returned to the clinic as instructed, on January 22, his weight had increased by six pounds, he had crackles in his lungs one third up, his self assessment was "poor", and his Zo had dropped below 16. He received 80mg Demadex, another inotropic infusion and was admitted to the hospital.



This patient data was obtained during a blinded study, in which the infusion clinic staff did not have access to the impedance data. When this patient returned from Christmas vacation, the clinic staff praised him for his one-pound weight gain. Had the staff been monitoring Zo, they would have been able to quickly see that the patient was retaining fluid as evidenced by his decreasing Zo value. The patient did not gain weight until he became symptomatic.

Lack of objective measures that detect early exacerbation as opposed to late exacerbation poses great management problems for patients living with heart failure. *Thoracic Zo measurement is an early indicator of fluid status changes allowing clinicians to practice proactive management rather than reactive fluid management in heart failure.*