

Increase In Lung Fluid Content in Response to Milrinone Therapy – Insights into the Activity of Milrinone Using ReDS Technology

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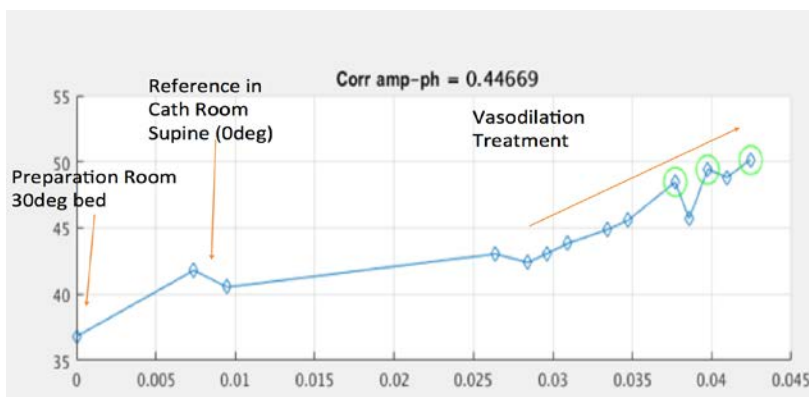
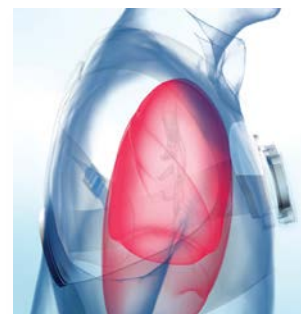
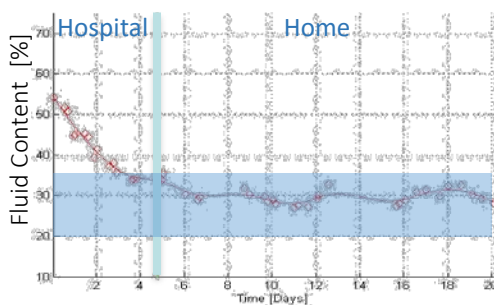


INTRODUCTION

- Remote dielectric sensing ReDS is a method for measuring lung fluid content currently being studied as a noninvasive method of monitoring fluid status in heart failure patients.
- ReDS is an FDA approved device that employs low-power electromagnetic signals emitted by a wearable vest across the thorax through the lung.
- Characteristics of signals received are related to their dielectric properties which are mostly determined by lung fluid content.
- ReDS values are expressed as a percent of lung volume.
- This noninvasive technology allows for quantification of changes in lung water.
- Current investigations are evaluating the correlation between ReDS values and invasive measurement of hemodynamics during routine right heart catheterizations in heart transplant patients.

CASE REPORT

- Heart failure patients undergoing clinically indicated right heart catheterizations were prospectively enrolled and assessed with concomitant ReDS readings.
- One heart failure patient who underwent right heart catheterization and ReDS measurement was treated with a milrinone drug study.
- The patient had decreased intracardiac filling pressures with an increased cardiac output in response to milrinone.:



Parameter	Pre-milrinone	Post-milrinone
Right Atrial Pressure (mmHg)	28	17
Pulmonary Artery Pressure (mmHg)	65/35 (48)	62/32 (44)
Pulmonary Capillary Wedge Pressure (mmHg)	39	32
Cardiac Output (L/min)	2.89	4.12
Mean Arterial Pressure (mmHg)	94	87
Systemic vascular resistance (dynes-sec/cm5)	1826	1359
Pulmonary vascular resistance (Woods unit)	3.2	2.9
ReDS (%)	42	49

DISCUSSION

- During vasodilation treatment with milrinone, the ReDS values increased in a linear fashion with concomitant drop in PCWP.
- This increase may be secondary to increased lung blood flow secondary to pulmonary vasodilation and increased cardiac output.