Author	Year	No. of patients	Primary endpoints	Time of measurements	Conclusion
Francis et al	1985	15	Acute vasoconstrictor response to intravenous furosemide in patients with chronic congestive heart failure - Change in stroke volume index - Change in left ventricular filling pressure - Change in heart rate - Change in mean arterial pressure - Change in systemic vascular resistance - Change in right atrial pressure - Change in plasma renin activity - Change in plasma norepinephrine levels - Change in plasma arginine vasopressin level	Hemodynamic measurements 20 minutes, 1,2,3,4 hours Blood samples 10, 20 minutes, 1,2,3,4 hours	Administration of intravenous furosemide in patients with congestive heart failure can promote hemodynamic deterioration during the initial 20 minutes possibly due to the early activation of renin-angiotensin system, sympathetic nervous system, and possibly release of arginine vasopressin.
Dikshit et al	1973	20	Hemodynamic effects of furosemide in congestive heart failure after acute myocardial infarction - Change in left ventricular filling pressure - Change in mean calf venous capacitance - Change in urine output - Change in heart rate - Change in blood pressure - Change in cardiac output - Change in urine flow - Change in peak natriuretic effect - Change in pulmonary wedge pressure	5,10,15,30,60, 120 minutes	Intravenous furosemide promotes a rapid significant decrease in left ventricular filling pressure possibly due to a direct vasodilatation effect on the pulmonary vasculature or peripheral venous pooling.
Schmieder RE	1987	10	Hemodynamic response to furosemide in patients undergoing chronic hemodialysis - Change in arterial pressure - Change in heart rate - Change in cardiac output - Change in total peripheral resistance - Change in central blood volume - Change in left ventrilar preload	5,10,15,30 minutes	Furosemide induces a fall in central blood volume by having a vasodilatory action on the capacitance vessels in patients with end-stage renal disease.
Ramires JA	1992	8	The hemodynamic effect of furosemide in patients with pulmonary edema - Change in right atrial pressure - Change in pulmonary wedge pressure - Change in heart rate - Change in cardiac output - Chancge in mean arterial presussre	5,15,30,60,120 minutes	Furosemide administration reduced RAP, PAWP, HR, COP and PAWP-COP gradient, probably by a redistribution of fluid excess in the interstitial to intravascular space, through changes in driving fluid forces, with predominance in colloid osmotic pressure, which reverse fluid from intravascular

					to interstitial observed in pulmonary edema
Kraus PA	1990	33	Change in acute preload effect after administration of furosemide as reflected by the pulmonary capillary wedge pressure	5,10,15,20,25,30,35,40,45,50,55,60 minutes	When giving furosemide as a bolus this does not immediately decrease pulmonary pressure. Unless mixed vasodlating agents are given concomitantly, there is a rise in PCWP

Table 1: Study characteristics

How to perform a ReDS measurment

1) Place the patient in a supine position and place the sensors across the thorax on the patient

2) Follow the instructions on the screen for correct placement and wait 60 seconds

3) Get the result in percentage on the screen