

ODM+ Case Study – Hypovolaemia: 5-Month Old Baby (Born Prematurely)

Weight 6 kg (13 lb), height 55 cm (21.6 in), body surface area (BSA) 0.31 m².

Admitted with bronchospasm and right lobar atelectasis. Chest drain *in situ* for pneumothorax. The baby was admitted to the operating theatre for insertion of central venous line. General anaesthetic used and ventilated. Extremities cold, baby tachycardic and pyrexial (39°C). **Blood Pressure (BP)** satisfactory.

1.

Flow Time corrected (FTc) is reduced, probably indicating an increase in afterload and in addition to the tachycardia and cool peripheries, it was decided to give some fluid.

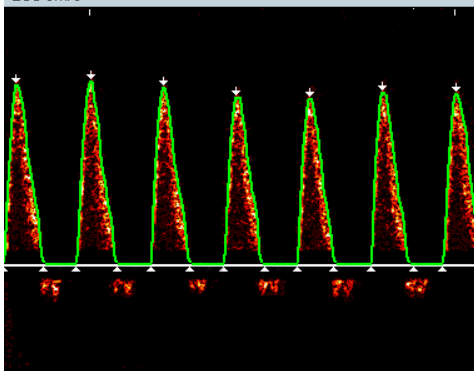
2.

A short while later following 10 ml/kg of fluid, the **FTc** has increased indicating an increase in preload and a reduction in afterload. **Peak Velocity (PV)** also increases probably to match increase in preload (but is also affected by changes in afterload). **Stroke Volume (SV)** increases from 5 ml to 6 ml and **Heart Rate (HR)** reduces from 171 to 156 beats per minute.

CO	l/min	SV	ml	FTc	ms
0.9		5		320	
PV	cm/s	CI		HR	bpm
136		2.9		171	

Flow Monitoring Mode

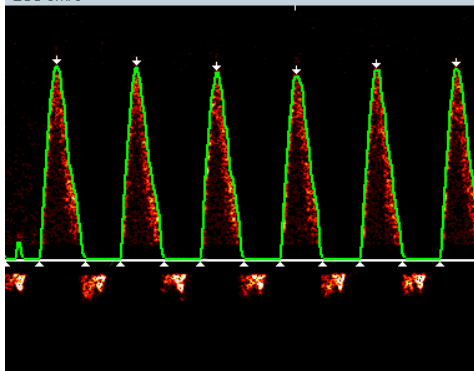
200 cm/s



CO	l/min	SV	ml	FTc	ms
1.0		6		344	
PV	cm/s	CI		HR	bpm
151		3.2		156	

Flow Monitoring Mode

200 cm/s



Summary

This short scenario shows that using the ODM+ allowed the clinician to quickly and safely monitor the haemodynamic variables for this seriously ill child and to evaluate the response to an intervention.

Since the ODM+ is a high precision device, the clinician can be confident that the changes in the flow parameters are reliable.