

ODM+ Case Study – Postoperative Trauma: 14-Year Old Child

Weight 30 kg (66 lb), height 151 cm (59.5 in), body surface area (BSA) 1.1 m².

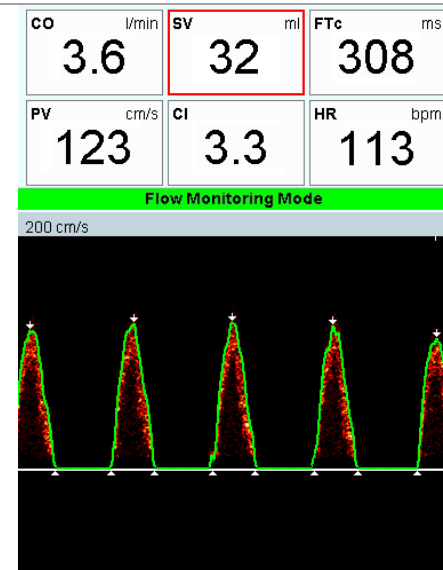
Multiple trauma following road traffic accident – suffered massive haemoperitoneum, chest trauma with pneumothorax, facial and abdominal trauma. Postoperative monitoring in intensive care following facial suturing, splenectomy and exploration of blunt trauma to liver. Ventilated and sedated. **Blood pressure (BP)** was reduced.

1.
Flow Time corrected (FTc) is reduced probably indicating an increased afterload – the most common cause being hypovolaemia. The clinician gave a rapid fluid challenge.

2.
Stroke Volume (SV) increased by >10% indicating fluid responsiveness. **Cardiac Output/Index (CO/I)** is unchanged, but **FTc** has also increased indicating a reduction in afterload. Further fluid was given.

3.
SV increased again by >10%. **FTc, Peak Velocity (PV)** and **CO/I** also increase while **Heart Rate (HR)** reduces. **BP** remained low and a dose of epinephrine was then given.

4.
Following the epinephrine, flow results continue to increase and **BP** also increased.



Summary

The ODM+ can be used safely to assess cardiac function and how it responds to interventions. The ODM+ is precise enough to see small changes in central vascular flow. Flow is very responsive to even small changes in circulating blood volume as well as changes in arterial compliance.