Pre-operative usage of IABP for patients for by pass surgery

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IABP Background

- **Preload**
- **Afterload**
- **Coronary flow**
- **Myocardial oxygen consumption in the heart is determined by:**
  - **Pulse rate**
  - **Transmural wall stress**
  - **Intrinsic contractile properties**

IABP in Myocardial Infarction and Cardiogenic Shock

- **Improves diastolic flow velocities after angioplasty**
- **Allows for additional intervention to be done more safely**

IABP During or After Cardiac Surgery

- **Patients who have sustained ventricular damage preoperatively and experience harmful additional ischemia during surgery**

- **Some patients begin with relatively normal cardiac function an experienced severe, but reversible, myocardial stunning during the operation**

Other Indications for IABP

- **Prophylactic use prior to cardiac surgery in patients with:**
  - **Left main disease**
  - **Unstable angina**
  - **Poor left ventricular function**
  - **Severe aortic stenosis**

Contraindications to IABP

- Severe aortic insufficiency
- Aortic aneurysm
- Severe ilio-femoral vessel disease

Possible complications

- Limb ischemia
  - Thrombosis
  - Emboli
- Bleeding and insertion site
  - Groin hematomas
- Aortic perforation and/or dissection
- Renal failure and bowel ischemia
- Neurologic complications including paraplegia
- Heparin induced thrombocytopenia
- Infection

Standard monitoring procedure for stabile patients (fast tracking surgery)

Aneshesia

- epidural catheter –day before surgery

- CVK

- arterial line

- urine catheter

- nasal and rectal temperature

Operating theatre

ICU

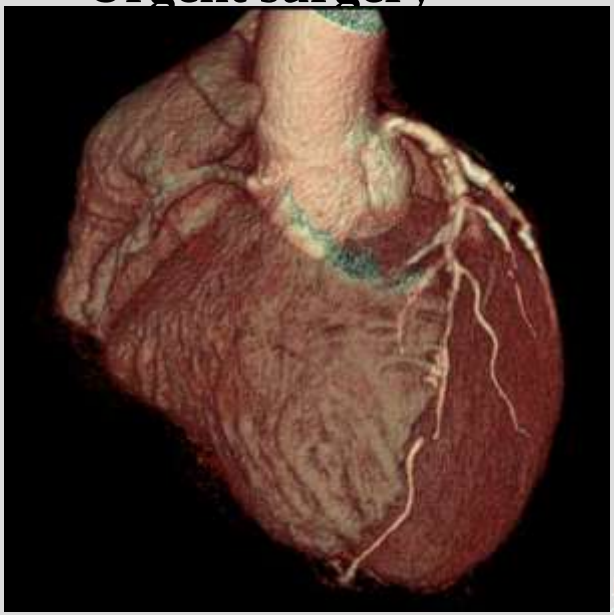
- early extubation

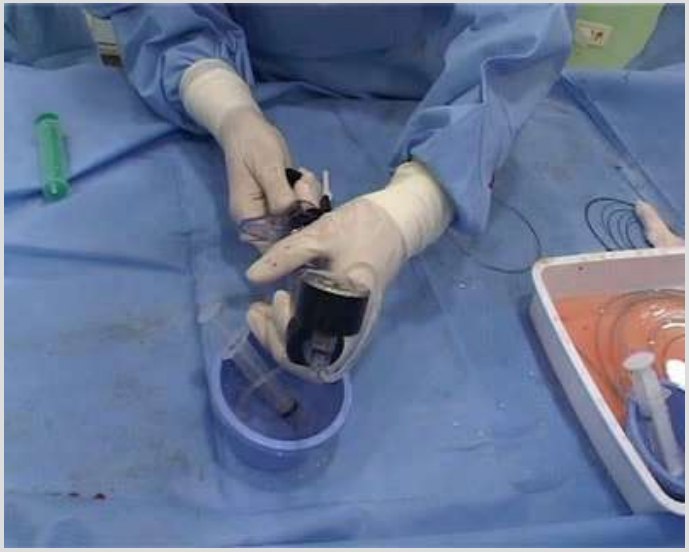
- early mobilisation

- home discharging 3/4th day

Tretment of haemodynamically non stabile patents

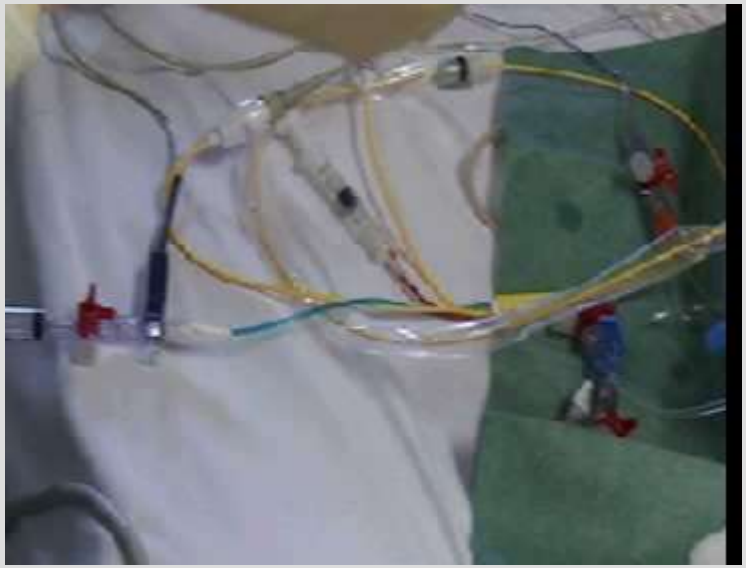
- **Hemodynamic stabilisation**
- **Urgent diagnostic**
- **Electrolite and methabolic stabiisation**
- **IABP**
- **fibrinoliza**
- **Angio (PTCA or stent)**
- **Urgent surgery**





Haemodynamic with Swan Ganz:

- patients volume need
- wedge (PWP), centrale venous pressure(CVP), cardiac output (CO) ; index (CI), peripherial resistance (SVR) pulmonary resistance (PVR),left ventricle stroke work index (LVSWI) right ventricle stroke work index, needs for inotropy



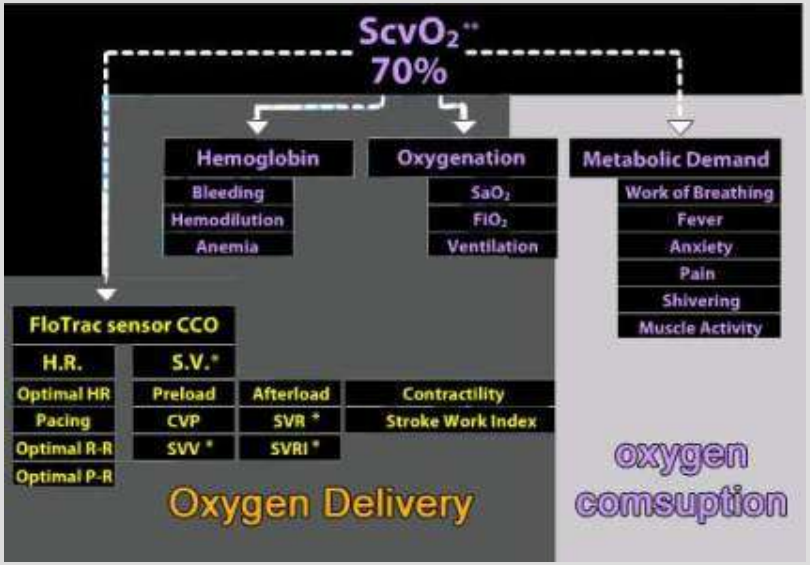
Development of haemodynamic:

- 1960 Swan Ganz invention
- 1970 measurment of cardiac output

Non-invasive monitoring

Vigileo:

Indications
ICU departments in:
-cardiac surgery
-cardiology
-pereoperative monitoring
- trauma and shock
Monitoring of pts with:
- Multiorgan failure
- Acute heart failure
- sepsis



Advantages of Vigileo :

-Continuous measurment of CO
-No need of manual calibration
-Time spearing
-Continuous measurment of ScvO2
-Adaptable for every ICU
-Less possibility for infection

Haemodynamic without Swan Ganz cathether- - Vigilleo monitoring

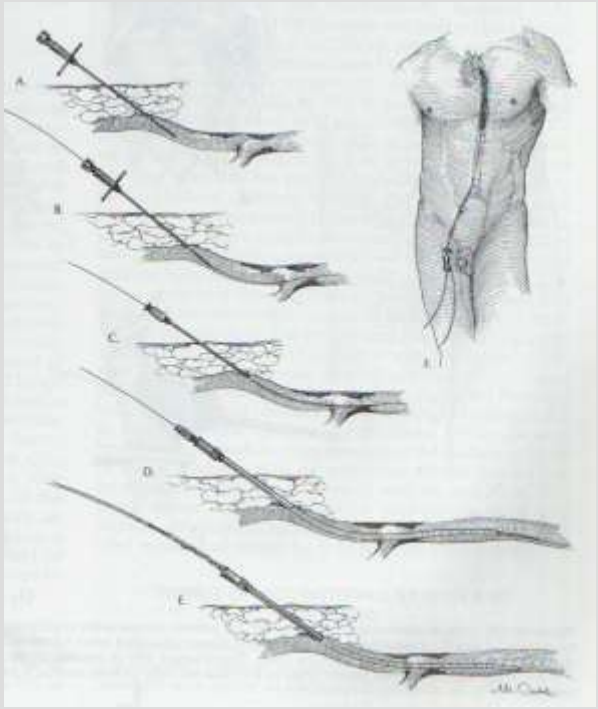
- **CO-Cardiac output**

Central venous oxymetry (% of O2 saturation in venous Hb)

- **CI-Cardiac index (CO/BSA)**
- **SV- stroke volumen**
- **SVI (SV/BSA) stroke volumen index**
- **SVR peripherial vascular resistance**
- **SVRI (SVR/BSA) peripherial vascular**
- **resistance index**
- **SVV respiratory determined stroke volume**
- **variations**
- **DO2 tissue O2 comspumption**
- **DO2I (DO2/BSA)tissue O2 compsumption index**

Insertion Techniques

- **Percutaneous**
  - **sheath less**
- **Surgical insertion**



Positioning

The end of the balloon should be just distal to the takeoff of the left subclavian artery
Position should be confirmed by fluoroscopy or chest x-ray

Treatment in haemodynamically instabile and shocked patients

CABG + IABP pre -op. 89pts

IABP and invasive lines

Stabilisation

Urgent operation

Idications

Non stabile angina

Acute myocardial infarction with haemodynamic instability

Acute left chamber failure

Chronic left chamber failure

High left main stenosis with haemodynamic instability

Preoperative monitoring

Prisma Flex - CRRT (treatement of ARI and CRI)

26.10.2008 first procedure –SCUF for acute pulmonary oedema

Old fashioned techniques - CAVH,

CVVH

Gambro AK 200

Advantages:

Normal woter balance

Electrolite control

Coagulation control

Decreasing of serum urea and creatinin level

Good patient comfort- without muscule crumps, hypogliecemia, paresthesis and vomiting

Preoperative treatment of end-stage patients – our experience

N=6090pts.

n=794 (14.5%)pts.- end-stage heart failure

-666 (83.8%) with coronary disease

-125 (15.7%) with terminal valvular disease

-3 (0.5%) congenital heart failure

Preoperative intubation 60pts.

IABP pre-op. 69 pts.

Cardiosurgery - Skopje