Fast track surgery: the role of the surgeon

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Fast track

- Is a process involving **rapid progress** from preoperative preparation through surgery and discharge from the hospital.
- Fast-track process is a **team activity**.
- **Necessary elements** of the fast-track program are choice and the titration of short-acting anesthetic drugs, standardized surgical procedures, early extubation, rewarming and sustained postoperative normothermia, postoperative pain control, early ambulation, alimentation and discharge.
concerted intraoperative and postoperative team management plan

- Cardiac surgeons
- Anesthesiologists
- Perfusionists
- OR personnel
- ICU / Intermediate care unit personnel
Leadership

- Defines strategies to establish a “fast track” program
- Establishes a team (coordinator)
- Involves the team in the “decision making” process
- Delegates
- Listens to others
The role of the surgeon

Management

- Selects patients
- Defines surgical strategies
- Performs high-quality surgery
- Guarantees reproducible/standardized results
- Cooperates in managing the postoperative phase
1. Patient selection

Inclusion criteria

- Isolated procedure or easy combined
- Good LV-RV function
- Low-risk profile (ES system) or selected TAVI
- “younger” patients or selected TAVI patients

Exclusion criteria

- Physical status =>3 (ASA)
- Severe KI, COPD, vascular disease
- Obesity (BMI>35)
- Emergency and redo
2. Surgical strategy

The surgeon should minimise the surgical trauma in order to promote early extubation and fast recovery.

- Isolated procedure (CABG, AVR, MVR, mixoma)
- Easy combined (i.e. AVR + 1 CABG)
- OPCAB
- Selected minimal invasive valve/TAVI procedures
- Selected hybrid procedures
- Normothermia-based setting
- Short CPB time (“fast” surgeon, sutureless valves)
- Mini-CPB
2. Surgical strategy

OPCAB surgery

OPCAB patients can be treated in a fast-track manner allowing rapid recovery and early extubation and discharge from ICU.
2. Surgical strategy

Selected minimal invasive valve surgery

- J-shaped mini sternotomy
- Right mini thoracotomy

- Less bleeding and need for transfusions
- Less respiratory complications
- Fast recovery and mobility with shortest hospital stay

Minimal invasive AVR

J-shaped mini-sternotomy
2. Surgical strategy

Selected TAVI in hybrid OR

- TRANSAPICAL
- TRANSAORTIC
Selected TAVI in hybrid OR

• TRANSAORTIC

Our latest experience
• Mini-thoracotomy
• Easy, reliable technique
• 10 cases last 5 months
• All extubated on the table
• No ICU stay
• No complications
2. Surgical strategy

Selected hybrid procedures

- TAVI + coronary stenting
- AVR + coronary stenting
2. Surgical strategy

Short CPB and clamp time

- Sutureless aortic valves
- Rapid deployment aortic valve (INTUTY)

![Diagram of aortic valve components]

- Bovine Pericardium with ThermaFix* Process
- Tri-leaflet Matched Thickness & Elasticity
- Alloy Wireform and Band
- Polyester Sealing Cloth
- Stainless Steel Frame
<table>
<thead>
<tr>
<th>Size</th>
<th>19 mm</th>
<th>21 mm</th>
<th>23 mm</th>
<th>25 mm</th>
<th>27 mm</th>
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INTUITY Valve System
INTUITY Valve System

Leaflet excision

3 guiding sutures

Stent expansion
INTUITY Valve System
78 yo patient schedule for AVR, MRepair, CABG

- AVR (Intuity 23mm)
- Mitral repair (ring 28mm)
- 3 CABG
- Aortic clamp time: 116 min
90 yo patient with AS
No criteria for TAVI
• AVR (Intuity 23mm)
• Aortic clamp time: 24 min
• Total surgical time: 105 min
2. Surgical strategy

Short CPB and clamp time

• Cor-Knot automated suture system
2. Surgical strategy

Use of mini-CPB

- Close circuit, no hemodilution (RAP)
- Less inflammatory response
- Less risk of postop vasoplegia
421 standard vs 421 fast-track patients

Fast-track patients had significantly shorter times to extubation (75 min vs. 900 min), as well as shorter lengths of stay in the postanesthetic or intensive care unit (4 h vs. 20 h), intermediate care unit (21 h vs. 26 h), and hospital (10 days vs. 11 days).

The Leipzig fast-track protocol is a safe and effective method to manage cardiac surgery patients after a variety of operations.
A clinical and economic evaluation of fast-track recovery after cardiac surgery.
Salhiyyah K, Elsobky S, Raja S, Attia R, Brazier J, Cooper GJ.
Department of Cardiothoracic Surgery, Northern General Hospital, Sheffield, United Kingdom

BACKGROUND:

- 2 groups
- Fast-track recovery after cardiac surgery decreases the intensive care LOS and the total duration of intubation. It is a cost-effective strategy compared with conventional recovery protocols; however, it does not reduce the total hospital LOS or the incidence of complications.
4510 PACU patients.

Using the multivariate logistic regression analysis, older age and left ventricular dysfunction were found to be independent risk factors for failure of the PACU protocol.
4270 consecutive patients. 2.2% readmitted
The main reason for ICU readmission was respiratory distress.
Multivariate analysis showed that the independent risk factors for ICU readmission in the CABG group were an age >65 years, peripheral arterial disease, and drainage >500 mL. Independent risk factors for the valve group included only preoperative congestive heart failure. No independent risk factor was defined for the CABG + valve group.
Mortality was significantly higher among the readmitted patients in all groups.
Conclusion

• In selected patients, fast-track cardiac surgery guarantees short intubation time and ICU length of stay.
• It is a team activity and the cardiac surgeon plays the role of team leader.
• Minimal invasive surgery, hybrid suites and new technologies minimise the surgical trauma and guarantee fast and reliable clinical results.
Thank you