



The Society of Cardiothoracic Surgeons of
Great Britain and Ireland



Parliamentary
and Health Service
Ombudsman

Ready reckoner

Edited and compiled May 2005

Using this simple 'ready reckoner' guide in discussions with patients should help communicate risk and give them a framework for decision making.

Below is current data on activity, outcomes and pre-operative predictors for risk obtained from published pooled national data. This is followed by a risk analysis chart to help relay the danger of adverse events occurring to the patient in a simple pictorial form.

Data and statements on outcomes after surgery are included here as they represent contemporary, national, pooled and published data which if used during the consent process will allow patients to receive consistent information.

Activity

- Typically a surgeon performs 100-200 open heart procedures per year. There were over 36,000 open heart operations in the UK in the financial year 2002-03, with an overall 3.5% operative mortality.

Outcomes

- Coronary artery bypass graft (CABG) carries a 2% mortality.
- Valve surgery carries a 4.3% mortality.
- Combined valve and CABG carries a 7.6% mortality.
- Mortality rates for CABG in different units range from 0.4 - 3.7%
- Operative mortality for mitral surgery is generally higher than for aortic surgery but after the early period long-term survival is similar.
- The proportion of patients staying in hospital for longer than two weeks following major heart surgery has slowly increased over the last decade.
- There is good evidence that repairing, rather than replacing, the mitral valve where possible is better for the patient.
- Mitral valve repair has an operative mortality less than one third that of mitral valve replacement.
- Reoperation for bleeding is required following 3 - 3.5% of cases.
- Stroke occurs after 3.1% of cases.
- Deep sternal wound infection occurs after 1 - 4% of cases and carries a 25% mortality.
- Post-operative renal dysfunction requiring dialysis occurs after 1.4% of cases and carries a 63% mortality.
- New onset atrial fibrillation occurs after 30% of cases.

Pre-operative predictors of risk

The Parsonnet score is now very inaccurate at predicting mortality. However if the score is divided by 3 it gives a reasonable prediction of operative mortality for contemporary practice in the UK and Ireland.

AGE

- Older patients stay longer in hospital after their operation and this appears to be increasing.
- Operative mortality for patients over the age of 75 has fallen from 7.2% in 1999 to 4.7% in 2003.
- Patients over 75 years old are almost six times more likely to die after CABG than patients under the age of 60 years.

SEX

- Women have worse outcomes; with an operative mortality which has been consistently been 1 - 1.5% higher than men.
- On average women spend an extra day in hospital after their operation than men.

SIZE

- Small body surface area is associated with increased post-operative mortality.

LEFT VENTRICULAR FUNCTION

- Patients with weak or damaged heart muscle are five times more likely to die after their operation than patients with good heart function.
- In the most recent data, patients who had one or more heart attacks had a reduced survival rate after CABG: 97.4% versus 98.5% for patients who had not had a heart attack.

LMS DISEASE

- Patients with left main stem disease are almost twice as likely to die after CABG.

Pre-operative predictors of risk (continued)

PREVIOUS SURGERY

- Previous heart surgery increases the risk of post-operative death around three fold.
- Previous heart surgery is associated with an increased post-operative stay.

DIABETES

- Over the last seven years the proportion of patients undergoing coronary surgery with diabetes has increased by 50%
- Over the past six years the post-operative mortality rate for diabetic patients has more than halved.

PERIPHERAL VASCULAR DISEASE

- Generally, peripheral vascular disease is associated with a doubling in post-operative mortality rate.
- On average patients with peripheral vascular disease spend about two days longer in hospital after their operation.

RENAL DISEASE

- The presence of renal disease increases mortality risk by five or six times.
- On average patients with renal disease spend an extra five to six days in hospital after their operation.

ANGINA STATUS

- Severe angina more than doubles post-operative mortality.
- Patients with the severest angina stay 1.5 days longer than patients with little or no angina.

DYSPNOEA

Breathlessness is associated with a higher risk of post-operative mortality; severe breathlessness doubles the risk whilst very severe breathlessness increases the risk four times.