



# BRISTOL HEART INSTITUTE

## University of Bristol Bristol Royal Infirmary



## Clinical Trials and Evaluation Unit Newsletter

### **BRI Cardiac Surgery Department voted 'Surgical Team of the Year'**

The staff of the Bristol Royal Infirmary Cardiac Surgery Department, along with their colleagues at the Bristol Heart Institute, have been voted 'Surgical Team of the Year' at a ceremony organised by Hospital Doctor magazine.



Professor Angelini (on the right) collected the award, which celebrates clinical excellence and innovation in hospital medicine. The Department was recognised for its pioneering work in developing ways to perform cardiac operations without the aid of the heart lung bypass machine ('off-pump' surgery). The judge commented 'This outstanding unit has been at the forefront of developments in cardiac surgery'.

The team were also in the running for Cardiovascular Medicine Team of the year - the first time in the award's history that a team has been short-listed for 2 categories.

### **Long term monitoring of cardiac surgery patients**

We are continuing to send annual questionnaires to all cardiac surgery patients who wish to take part in the monitoring programme. The information that past patients return provides us with a continuous record of their health since discharge from hospital. Over 5,500 patients are now participating and we have been able to use the information they provide to supplement data we already collect on each operation performed and complications experienced before hospital discharge. We can only include records if patients give us permission to do so, so it is really important that everyone who would like to help out with this important work returns their yellow consent form.

One study that used this information looked at patients undergoing first time coronary artery bypass grafting, and compared the post-operative experience of patients with diabetes to those without diabetes. This is because diabetic patients have a higher risk of developing complications such as infection. The study found that there was little difference in the risk of complications before hospital discharge, although diabetic patients reported a higher incidence of hospital readmissions and recurrence of symptoms at 5 years post-surgery. Compared to previous studies, however, the outcomes for diabetic patients were much improved, probably due to improvement in surgical techniques and better post-operative blood glucose management strategies.

#### **How many cardiac surgery patients are diabetic?**

The cardiac surgery team are about to start a study which will test all cardiac surgery patients who want to participate for diabetes. This will tell us the proportion of patients who are undiagnosed before surgery and who would benefit from glucose management strategies during and after their hospital stay. The results will also indicate whether this test should be introduced routinely.

## Transfusion Threshold Reduction (TITRE)

The department is currently trying to reduce the amount of blood given to patients after cardiac surgery. This is due to known potential side effects of receiving blood and also the increasing cost of blood products. Whilst the benefits of red cells for the management of life-threatening blood loss are clear, the benefit to those who have borderline anaemia are less established.

The normal haemoglobin level is around 13.5g/dL for men and 11.5g/dL for women. Most people are transfused after heart surgery because their haemoglobin level has fallen below a set value. In our unit this threshold is currently a haemoglobin of 8g/dL. There is evidence from studies in patients undergoing other types of surgery that a lower haemoglobin concentration, for example a haemoglobin of 7g/dL, is safe. This lower threshold means fewer patients need to receive blood. There is even evidence that reducing the number of transfusions in this way reduces complications and improves outcomes. On the basis of these studies some cardiac units use a haemoglobin set value of 7g/dL routinely.

The TITRE study is randomising cardiac surgery patients who consent to take part between the usual transfusion threshold (8g/dL) and a lower one (7g/dL). It will compare the recovery of patients prior to discharge by looking at complications suffered and how long patients are in intensive care and in hospital after their operation, and infections during and after their hospital stay.

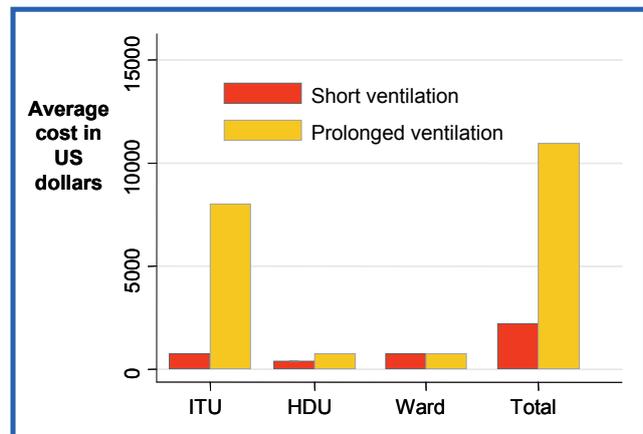
We plan to confirm the results found here with a larger study across several hospitals aiming to recruit over 3000 patients. If the lower transfusion threshold shows no harm or improves patient outcomes it will be adopted in this unit.

## Prolonged ventilation in post-cardiac surgery patients

All patients require ventilation after cardiac surgery. Evidence has emerged suggesting that ventilation can be stopped earlier after surgery than was previously thought without compromising patient's clinical outcome, reducing the length of intensive care unit and hospital stay, and minimising costs to the NHS.

To investigate this and identify predictors of prolonged ventilation, patients undergoing cardiac surgery who had 'short' ventilation (less than 4 days) were compared to those receiving 'prolonged' ventilation (4 days or more).

The study found a number of factors that could increase the chance of needing prolonged ventilation, such as undergoing emergency surgery or reoperation for bleeding. It also established that prolonged ventilation was associated with more post-operative complications and was able to quantify the extra costs (see graph). Being able to predict who is at risk of prolonged ventilation may lead to patients who are at higher risk being managed differently to avoid prolonged ventilation and its associated side-effects.



## Could you be a patient volunteer?

For 14 years now a group of volunteers who have had cardiac surgery at the BRI have been visiting current patients to talk about cardiac surgery and post-operative recovery from a patient's perspective. At the moment there are 7 members and, to cover all patients, two need to visit the wards each day on a rota. If you would be interested in joining the group, please contact our office (see below) and we will pass your details on to the organiser. If you live outside the Bristol region, there may be opportunities to visit patients waiting for surgery in a hospital nearer to you.

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