NHS BLOOD AND TRANSPLANT

PANCREAS ADVISORY GROUP

SUMMARY OF CUSUM MONITORING OF OUTCOMES FOLLOWING PANCREAS TRANSPLANTATION

INTRODUCTION

1. NHSBT monitors short-term patient outcomes following organ transplantation through centre specific cumulative sum (CUSUM) analyses. These are undertaken quarterly for pancreas transplantation. These 'within centre' analyses enable prompt detection of any changes in failure and mortality rates, providing external assurance and enabling centres to compare current outcomes with their own past performance to assist in internal auditing.

2. The methods used in the analysis are based on CUSUM monitoring and compare current outcome rates with an expected rate.

3. Each quarter, CUSUM monitoring reports on 30-day graft failure and mortality following pancreas transplantation are produced and sent to each centre. This paper summarises the results of these reports for the six month period since the last Pancreas Advisory Group meeting. Where signals have occurred, actions that were taken and lessons learnt are noted.

RESULTS

4. **Table 1** shows that over the six month period since the last Pancreas Advisory Group meeting there has been one signal in pancreas transplantation CUSUM reporting. The details are noted below.

5. The one signal was noted at Cambridge in the latest report in September. This signal had been anticipated by Cambridge in February following a run of four graft failures within 30 days of transplant in a run of 11 transplants.

6. An investigation was undertaken at Cambridge prior to the signal in September and an external review was held in May. The report is provided in **Appendix I**.

Table 1

Month CUSUM report issued	No. reports issued	No. signals	No. signals requiring investigation	No. investigations outstanding
June	8	0	0	0
September	8	1	1	0
Total	**16**	**1**	**1**	**0**

CONCLUSION

7. Over the six month period since the last Pancreas Advisory Group meeting there has been one signal in pancreas transplantation CUSUM reporting which required investigation.

Claire Counter
Statistics and Clinical Studies **September 2017**

APPENDIX I

NHSBT Pancreas Advisory Group External Review, Addenbrookes Hospital
22nd May 2017

Mr John Casey (Chair Pancreas Advisory Group)
Professor Peter Friend (Professor of Transplantation, Oxford)
Hazel Bentall (Lay member of Pancreas Advisory Group)

In attendance from Addenbrookes Hospital:
Professor Chris Watson (Clinical Lead for Pancreas Transplantation)
Mr Paul Gibbs (Clinical Director for Transplantation)
Mr Gavin Pettigrew (Consultant Transplant Surgeon)
Mr Andrew Butler (Consultant Transplant Surgeon)
In addition to other members of the clinical transplant service.

Background
NHSBT ODT were asked by Addenbrookes Hospital to carry out an external review of 4 pancreas graft losses between 3/11/16 and 11/2/17. The external review consisted of a joint MDT meeting with representatives from the Addenbrookes pancreas transplant programme and the NHSBT Pancreas Advisory Group. The 4 cases were presented by Professor Watson and discussed in an open forum. Prior to the meeting, summaries of the cases were provided to the review group along with statements from clinicians directly involved with the cases but who had since moved to other hospitals.

MDT Summary
Each Case was discussed individually in detail.

Case 1: DBD SPK transplant.
- Cause of graft loss- graft thrombosis day 7
- protocol dose of heparin omitted on day of transplant due to pancreas graft bleeding.
- patient discharged day 6- role of possible dehydration in 24 hours post discharge discussed

Case 2: DCD SPK transplant
- cause of graft loss- intra operative bleeding
- previous recipient native pancreatectomy
- significant bowel oedema at end of procedure
- uncontrollable bleeding from portal vein anastomosis- graft pancreatectomy

Case 3: DBD SPK transplant
- cause of graft loss- kidney and pancreas graft thrombosis with underlying donor vascular disease.
- Poor pancreas graft function in first 24 hours and patient returned to theatre
- Thrombosis of both kidney and pancreas
- Pathology showed underlying intimomedial mucoid degeneration of graft arteries and hypertensive vasculopathy
- no pre existing donor evidence to suggest underlying disease.

Case 4: DBD SPK transplant
- cause of graft loss- partial graft thrombosis/sepsis
- difficult implant due to previous left renal graft (both transplants on right side) and recipient vascular disease
- post operative stenosis of right external iliac artery above and below renal artery anastomosis requiring stenting.
- pancreas removed 2 weeks post transplant due to splenic artery occlusion and distal SMA occlusion.

Conclusion

The external review group concluded that there was no pattern to the graft losses. In addition, the review group acknowledged that the Addenbrookes team had already undertaken a full review of the cases and that the management of the patients and decision making processes were appropriate and consistent with good practice. There was some discussion around variation between in post op heparin protocols and whether a consensus would be helpful.

It was noted by the review group and the Addenbrookes team that all of these transplants occurred out of normal working hours (2 after midnight) and that 2 of these transplants were carried out over a weekend by a single consultant. This stimulated broader discussion around the current challenges of out of hours transplantation and surgeon fatigue, theatre access, and the increasing need to involve consultant colleagues out of hours during busy periods of on call.