NHS BLOOD AND TRANSPLANT

PANCREAS ADVISORY GROUP

PANCREAS TRANSPLANT OUTCOME

INTRODUCTION

1 For information, national data on outcomes following vascularised pancreas transplantation are presented.

DATA & METHODS

2 Data were obtained from the UK Transplant Registry and include deceased donor simultaneous pancreas and kidney (SPK) and isolated pancreas transplants performed in the UK between 1 January 2019 and 31 December 2022. Transplants using pancreases from donors after brain death (DBD) and donors after circulatory death (DCD) are analysed separately.

3 Pancreas and kidney one, two and three year graft and patient survival are reported and presented in **Figures 1** to **5**. The survivor function was estimated using the Kaplan-Meier method. Graft survival is measured from date of transplant to graft failure, censoring for death with a functioning graft or, if functioning, the date of last known follow-up. Patient survival is measured from date of transplant to patient death, censoring for patients who were alive at their last known follow-up.

RESULTS

4 For one-year pancreas graft survival following first SPK transplant between the time periods 2019-2020 cf. 2021-2022, there was a decline for both DBD donors and DCD donors, both were borderline statistically significant p=0.08, p=0.07, respectively. This decrease in graft survival is likely due to the impact of COVID-19. Three-year pancreas graft survival following first SPK transplant in 2019-2020 was 90% for DBD and 91% for DCD donors. One-year kidney graft survival following first SPK transplant in 2021-2022 was 97% for DBD and 97% for DCD donors.

5 There was no significant difference in one-year patient survival following first SPK transplant between the time periods 2019-2020 cf. 2021-2022, for DBD donors 98% and 96% respectively, p=0.29, or for DCD donors 98% and 95% respectively, p=0.23.

6 There was no significant difference in one-year pancreas graft survival following pancreas only transplants from DBD donors between the time periods 2019-2020 cf. 2021-2022, 83% and 71% respectively, p=0.50.

7 Further, there was not a significant difference in one-year pancreas graft survival between pancreas transplants alone (PTA) and pancreas after kidney transplants (PAK) from DBD, p=0.63.

8 For first pancreas after kidney transplants performed between 2012-2022, there was no difference in one-year graft or patient survival between pancreas after living kidney (PALK) and pancreas after deceased kidney (PADK), p=0.50 and p=0.58 respectively.

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1 Simultaneous kidney/pancreas transplants - donor after brain death (DBD)

Figure 1 shows pancreas graft survival and kidney graft survival in recipients receiving their first simultaneous kidney/pancreas (SPK) transplant performed from donors after brain death, January 2019 – December 2020 and January 2021 – December 2022. Pancreas graft, kidney graft and patient survival estimates and confidence intervals are shown at one year, two years and three years in **Table 1.1**. Results are for adult patients only.

Figure 1 Graft survival after first SPK transplants from donors after brain death, 1 January 2019 – 31 December 2022

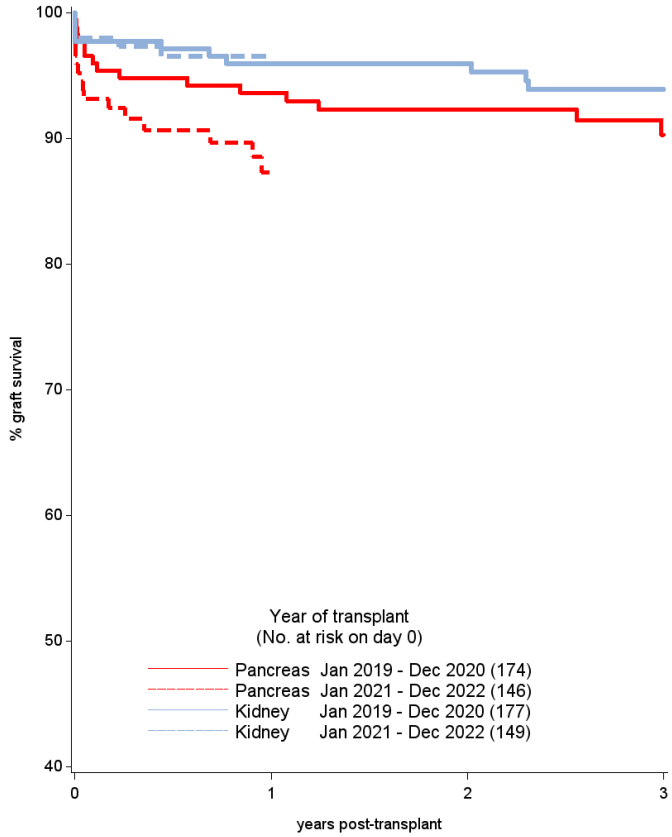

Table 1.1 Graft and patient survival after first SPK transplant from a DBD, 1 January 2019 to 31 December 2022

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval) One year		Two year		Three year	
Pancreas graft survival (one year, p=0.08)							
Jan 2019 - Dec 2020	174	94	(89 - 96)	92	(87 - 95)	90	(84 - 94)
Jan 2021 - Dec 2022	146	87	(80 - 92)				
Pancreas patient survival (one year, p=0.29)							
Jan 2019 - Dec 2020	176	98	(94 - 99)	98	(94 - 99)	96	(91 - 98)
Jan 2021 - Dec 2022	146	96	(90 - 98)				
Kidney graft survival (one year, p=0.83)							
Jan 2019 - Dec 2020	177	96	(92 - 98)	96	(92 - 98)	94	(89 - 97)
Jan 2021 - Dec 2022	149	97	(92 - 99)				

2 Simultaneous kidney/pancreas transplants - donor after circulatory death (DCD)

Figure 2 shows pancreas graft survival and kidney graft survival in recipients receiving their first simultaneous kidney/pancreas (SPK) transplant performed from donors after circulatory death, January 2019 – December 2020 and January 2021 – December 2022. Pancreas graft, kidney graft and patient survival estimates and confidence intervals are shown at one year, two years and three years in **Table 1.2**. Results are for adult patients only.

Figure 2 Graft survival after first SPK transplants from donors after circulatory death, 1 January 2019 – 31 December 2022

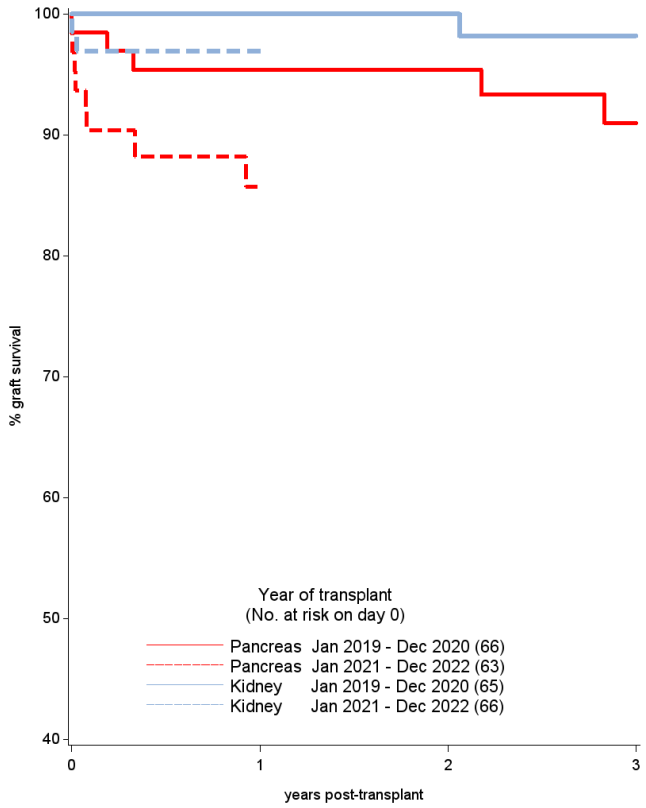

Table 1.2 Graft and patient survival after first SPK transplant from a DCD, 1 January 2019 to 31 December 2022

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval) One year	Two year	Three year
Pancreas graft survival (one year, p=0.07)				
Jan 2019 - Dec 2020	66	95 (86 - 98)	95 (86 - 98)	91 (79 - 96)
Jan 2021 - Dec 2022	63	86 (73 - 93)		
Pancreas patient survival (one year, p=0.23)				
Jan 2019 - Dec 2020	66	98 (89 - 99)	97 (87 - 99)	94 (83 - 98)
Jan 2021 - Dec 2022	64	95 (85 - 98)		
Kidney graft survival (one year, p=0.16)				
Jan 2019 - Dec 2020	65	100 -	100 -	98 (88 - 99)
Jan 2021 - Dec 2022	66	97 (88 - 99)		

3 Pancreas only transplants – donor after brain death (DBD)

Figure 3 shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from DBD donors, January 2019 – December 2020 and January 2021 – December 2022. There were too few DCD donor pancreas only transplants in each time period to analyse (n<5). Graft and patient survival estimates and confidence intervals are shown at one year, two years and three years in **Table 1.3**. Results are for adult patients only and survival estimates should be interpreted with caution due to small numbers.

Figure 3 Graft survival after first pancreas only transplant from deceased donors, by donor type and year, 1 January 2019 – 31 December 2022

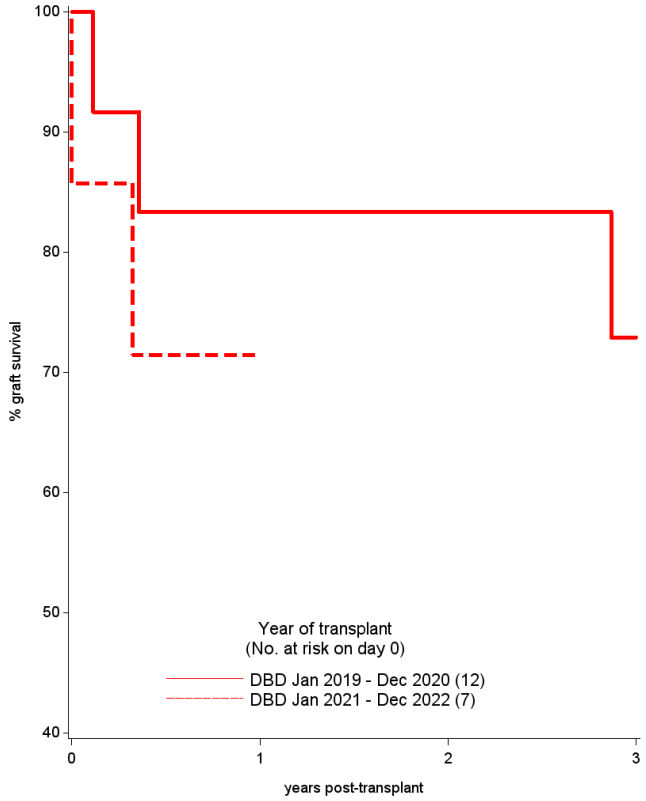

Table 1.3 Graft and patient survival after first pancreas only transplant, 1 January 2019 to 31 December 2022

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval) One year	Two year	Three year
DBD graft survival (one year, p=0.50)				
Jan 2019 - Dec 2020	12	83 (48 - 96)	83 (48 - 96)	73 (37 - 91)
Jan 2021 - Dec 2022	7	71 (26 - 92)		
DBD patient survival (one year, p=0.46)				
Jan 2019 - Dec 2020	12	91 (51 - 99)	91 (51 - 99)	82 (45 - 95)
Jan 2021 - Dec 2022	7	100 -		

4 Pancreas only transplants by transplant type – donor after brain death (DBD)

Figure 4 shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from DBD donors, January 2019 – December 2022. There were too few DCD donor pancreas only transplants in each time period to analyse (n<5). Graft and patient survival estimates and confidence intervals are shown at one year, two years and three years in **Table 1.4**. Results are for adult patients only and survival estimates should be interpreted with caution due to small numbers.

Figure 4 Graft survival after first pancreas only transplant from deceased donors, by donor and transplant type, 1 January 2019 – 31 December 2022

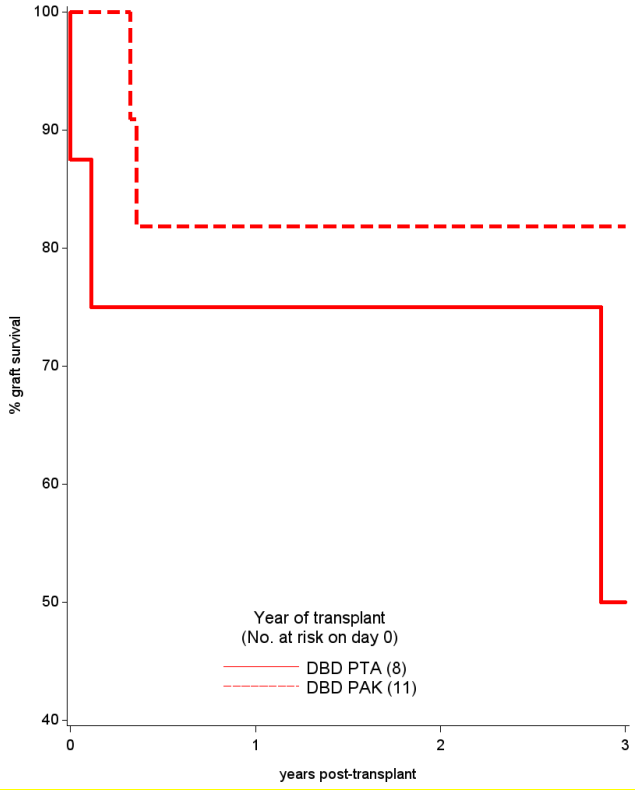

Table 1.4 Graft and patient survival after first pancreas only transplant by transplant type, 1 January 2019 to 31 December 2022

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval) One year		Two year		Three year	
DBD graft survival (one year, p=0.63)							
PTA	8	75	(31 - 93)	75	(31 - 93)	50	(8 - 83)
PAK	11	82	(45 - 95)	82	(45 - 95)	82	(45 - 95)
DBD patient survival (one year, p=0.46)							
PTA	8	100	-	100	-	100	-
PAK	11	91	(51 - 99)	91	(51 - 99)	76	(30 - 94)

5 Pancreas after kidney transplants by kidney donor type – deceased donors

Figure 5 shows pancreas graft survival in recipients receiving their first pancreas after kidney transplant performed from deceased (DBD and DCD) donors, January 2012 – December 2022. Graft and patient survival estimates and confidence intervals are shown at one year, two years and three years in **Table 1.5**. Results are for adult patients only and survival estimates should be interpreted with caution due to small numbers.

Figure 5 Graft survival after deceased donor pancreas after kidney transplant by kidney donor type, 1 January 2012 – 31 December 2022

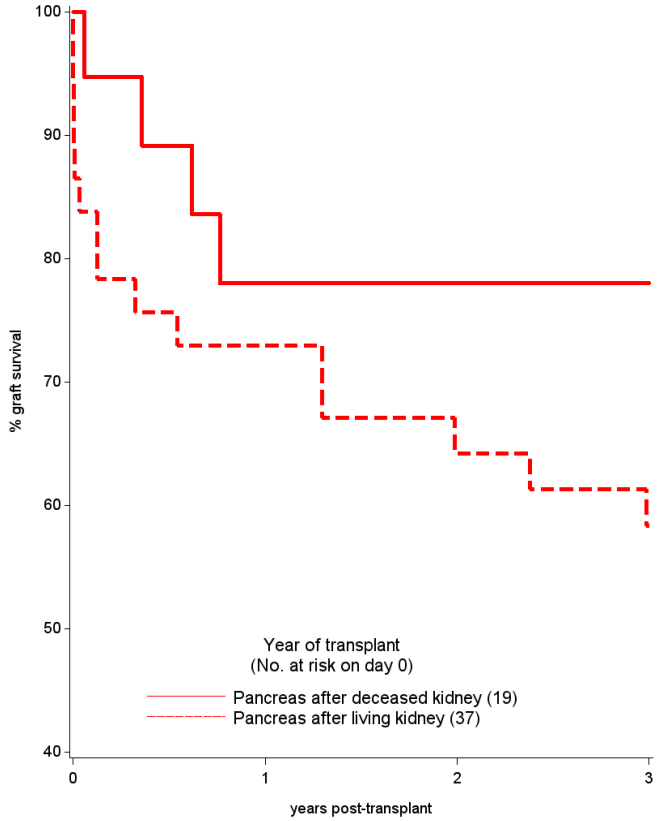

Table 1.5 Graft and patient survival after first pancreas after kidney transplant, 1 January 2012 to 31 December 2022

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval) One year	Two year	Three year
Pancreas graft survival (one year p=0.50)				
PADK	19	78 (51 - 91)	78 (51 - 91)	78 (51 - 91)
PALK	37	73 (56 - 84)	64 (46 - 77)	58 (41 - 73)
Pancreas patient survival (one year, p=0.58)				
PADK	19	94 (67 - 99)	88 (60 - 97)	68 (39 - 85)
PALK	37	97 (82 - 99)	97 (82 - 99)	94 (78 - 98)