

SECTION G PERITONEAL DIALYSIS

Prospective audit data of the incidence of peritoneal dialysis (PD) associated peritonitis, adequacy of dialysis, causes of technique failure are reported to the Scottish Renal Registry (SRR) by all adult renal units in Scotland.

The number of prevalent adult patients treated with PD was 226 at the end of December 2015 (see table B3.2) with 75% of adult PD patients using automated PD (APD). The proportion of all adult RRT patients using PD varies by unit (see table B2.2).

G1 Reasons for starting and stopping PD in adult renal units 2011-2015											
Renal unit	New	From HD	Transfer in	From Tx	Total in	Death	To Tx	To HD	Transfer out	Re-covered	Total out
ARI	44	24	4	5	77	9	21	48	1	1	80
XH	46	16	2	1	65	29	18	26	0	0	73
DGRI	33	3	4	2	42	7	6	24	2	0	40
GLAS	108	45	4	13	170	36	41	86	4	2	169
MONK	35	9	2	4	50	5	10	31	1	1	48
NINE	36	16	0	2	54	7	12	40	1	2	62
RAIG	28	21	2	3	54	6	12	40	2	1	61
RIE	61	23	8	5	97	25	25	55	0	2	107
VHK	38	13	1	1	53	13	9	37	0	0	59
Total	429	170	27	36	662	137	154	387	11	9	699

G2 PD associated peritonitis rates in adult renal units 2000-2015									
	2000-2007	2008	2009	2010	2011	2012	2013	2014	2015
Months between episodes	19.9	18.5	18.7	18.8	23.4	27	22.1	24.2	20.6

The definition of PD associated peritonitis used by the SRR can be found on the SRR website:

<http://www.srr.scot.nhs.uk/Projects/Projects3.html#periton>

Recurrent, repeat or relapsed peritonitis episodes are included in the total peritonitis rate.

G3 PD associated peritonitis rates in adult renal units 2011-2015				
Unit	No. of peritonitis episodes	Total patient months on PD	Peritonitis rate (months between episodes)	Peritonitis rate (episodes per PD treatment year)
ARI	68	1552	22.8	0.53
XH	69	2553	37.0	0.32
DGRI	33	811	24.6	0.49
GLAS	141	2860	20.3	0.59
MONK	26	599	23.0	0.52
NINE	33	1237	37.5	0.32
RAIG	57	954	16.7	0.72
RIE	111	1957	17.6	0.68
VHK	59	1296	22.0	0.55
SCOTLAND	597	13819	23.1	0.52

There is variation in peritonitis rates between renal units.

RAIG and RIE have peritonitis rates across the five years worse than the minimum standard set by the Renal Association (< 1 episode per 18 months).

G4 Rate (PD treatment months between episodes) of causative organisms of PD peritonitis in adult renal units 2011-2015							
Renal unit	Staph aureus	Coagulase negative staph	Gram negative bacilli	Fungi	Other	Culture negative	Total Rate
ARI	1552.4	97.0	119.4	1552.4	110.9	67.5	22.8
XH	319.1	232.1	255.3	0.0	283.7	82.4	37.0
DGRI	270.3	62.4	162.2	0.0	115.9	162.2	24.6
GLAS	178.8	92.3	95.3	476.7	89.4	110.0	20.3
MONK	75.0	0.0	299.8	199.9	99.9	85.7	23.0
NINE	206.2	154.6	176.7	1237.2	137.5	618.6	37.5
RAIG	317.9	73.4	73.4	0.0	47.7	119.2	16.7
RIE	150.5	51.5	150.5	1957.0	51.5	244.6	17.6
VHK	162.0	58.9	92.6	0.0	185.1	216.0	22.0
Average rate	217.6	94.1	132.8	1106.3	94.8	114.4	23.1

The proportion of culture negative peritonitis in Scotland 2011-2015 is 19.4%, but varies by unit between 6.1 - 44.9%.

G5 Number of patients with total (peritoneal and renal) creatinine clearances (litres/week/1.73m²) in each 6 months audit period 2011-2015 and percentage of patients with inadequate (<50) and borderline (50-60) creatinine clearances

Year	Adequacy						% < 50	% 50-60
	< 50	50-60	61-70	>70	Unassessed	Total		
2011a*	22	30	37	110	48	247	8.9	12.1
2011b*	23	35	32	98	61	249	9.2	14.1
2012a	24	37	26	94	54	235	10.2	15.7
2012b	25	24	34	103	45	231	10.8	10.4
2013a	16	30	33	92	112	283	5.7	10.6
2013b	23	31	34	84	52	224	10.3	13.8
2014a	25	29	27	79	44	204	12.3	14.2
2014b	25	29	30	88	34	206	12.1	14.1
2015a	28	28	19	73	59	207	13.5	13.5
2015b	25	27	26	74	61	213	11.7	12.7
Total	236	300	298	895	570	2299	10.3	13.0

* a refers to first 6 months and b refers to second 6 months of each year

The reasons for not having had adequacy of PD assessed include being within 2 months of starting PD, stopping PD early in the audit period or patients with significant residual renal function who were considered unlikely to have inadequate dialysis.

At the end of each 6 month audit period between 2011-2015 an average of 10.3% of patients on PD had a total creatinine clearance < 50 Litres/week/1.73m² and 13% had a total creatinine clearance 50-60 Litres/week/1.73m² indicating that these patients had either inadequate dialysis or borderline dialysis adequacy.

G6 Causes of PD technique failure in each adult renal unit 2011-2015															
Renal unit	Peritonitis		Access		Under-dialysis		Poor UF*		High IP**		Wish HD		Stop Dialysis		Total
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	
ARI	15	33	1	2	17	38	0	0	5	11	5	11	2	4	45
XH	36	41	5	6	19	22	5	6	10	11	11	13	1	1	87
DGRI	12	32	5	13	11	29	3	8	3	8	3	8	1	3	38
GLAS	23	37	10	16	10	16	2	3	3	5	13	21	2	3	63
MONK	17	41	3	7	12	29	2	5	3	7	3	7	1	2	41
NINE	20	63	4	13	2	6	3	9	0	0	3	9	0	0	32
RAIG	14	41	4	12	7	21	0	0	4	12	5	15	0	0	34
RIE	6	23	3	12	6	23	2	8	3	12	6	23	0	0	26
VHK	6	27	1	5	10	45	1	5	2	9	2	9	0	0	22
Total	149	38	36	9	94	24	18	5	33	9	51	13	7	2	388

* Poor ultrafiltration

** High intraperitoneal pressure

Peritonitis remains the leading cause of PD technique failure.