

SECTION E PERITONEAL DIALYSIS

The prospective national audit of the incidence of peritoneal dialysis (PD) related peritonitis, adequacy of peritoneal dialysis and causes of PD technique failure is reported to the SRR from all adult renal units in Scotland every six months. The causative organism and clinical outcome of each episode of peritonitis is recorded.

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

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

Peritonitis data from 01 January 2000 to 31 December 2011 are reported here, and peritoneal dialysis adequacy and technique failure data from 2011.

The number of prevalent adult patients on PD fell during 2011 from 273 patients on 31 December 2010 to 250 on 31 December 2011.

E1 Peritonitis rates in adult renal units 2000-2011						
Renal unit	Peritonitis rates (months between episodes)					Prevalent PD patients 31 December 2011
	2000-2007	2008	2009	2010	2011	
ARI	17.7	23.0	33.3	19.3	20.0	22
XH	27.2	22.8	22.4	20.8	40.3	46
DGRI	29.8	38.6	17.1	24.8	67.0	13
GLAS*	-	-	-	25.2	15.5	50
GRI	19.7	25.9	29.0	-	-	
MONK	28.9	13.5	26.5	17.2	54.3	10
NINE	23.1	31.2	40.3	18.4	38.4	23
RAIG	15.3	23.9	33.2	19.6	32.7	18
RIE	15.6	13.0	15.2	15.5	18.0	40
VHK	18.7	27.3	14.5	14.9	22.7	28
WIG*	19.6	12.7	16.1	-	-	
Scotland	19.9	18.5	18.7	18.8	23.4	250

*GRI and WIG merged in August 2010; their data are combined for 2010 and 2011 as GLAS.

Peritonitis rates are quoted as the number of patient months between infections.

Although the national peritonitis rate improved to 1 episode every 23 months in 2011, during the past 4 years there was wide variation in the incidence of peritonitis in the some units as well as wide variation between units.

E2 Organisms causing PD peritonitis 2011		
Organism	Number of peritonitis episodes	% of total
Coagulase negative Staphylococcus	45	34.6
Staphylococcus aureus	15	11.5
Gram negative bacilli	20	15.4
Other bacteria (e.g. Streptococci)	25	19.2
Fungal	2	1.5
Culture negative	23	17.7
Total	130	

This spectrum of causative organisms is similar to previous SRR reports and to reports from other regional and national registries.

E3 Causes of PD technique failure 2011		
Cause of PD failure	Number of patients	% of total
Peritonitis	33	38.8
Inadequate dialysis/ poor ultrafiltration	32	37.6
Failed peritoneal access	7	8.2
High intra peritoneal pressure	7	8.2
Switch to haemodialysis	4	4.7
Withdrawal of RRT	2	2.4
Total	85	

Peritonitis and inadequacy of dialysis/ poor ultrafiltration remain the commonest causes of PD technique failure and subsequent switching of PD patients to HD.

All prevalent PD patients at the end of June 2011 and at the end of December 2011 had a most recent total creatinine clearance $> 50/L/week/1.73m^2$.

SECTION F ANAEMIA

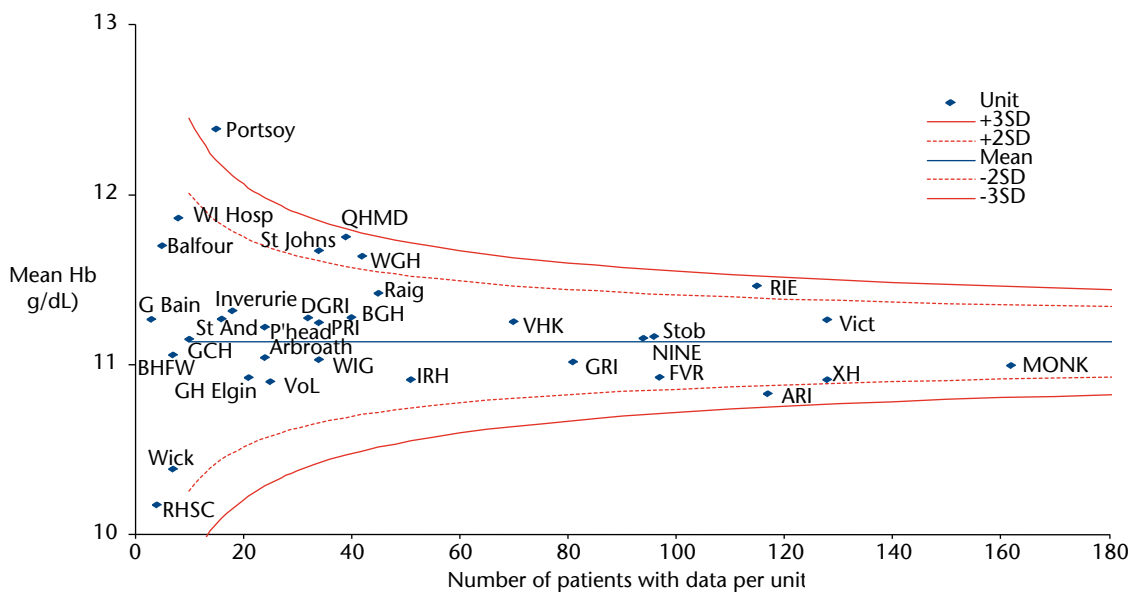
The anaemia audit was performed in May 2012; all patients in Scotland receiving hospital or home haemodialysis on 02 May 2012 were included in the audit. We excluded results where patients had a recent blood transfusion. There were 1832 results from 1873 patients (98%).

Haemoglobin concentration (Hb) was measured in a predialysis blood sample after the first short interdialytic gap of the audit week, or as soon as possible thereafter. Auditing after the short (2 day) gap is done in order to minimise the potential effect of dilution due to fluid overload.

The target for achieved haemoglobin in individual patients remains unclear. NHS Quality Improvement Scotland (NHS QIS) suggests a unit specific target of Hb ≥ 10 g/dL in $\geq 85\%$ of patients after 3 months of RRT. The UK Renal Association updated their guidelines in 2010 and in version 5, there is now a recommended target Hb of 10-12g/dL, but only for those CKD patients receiving ESA therapy.

In light of the changing guidelines and uncertainty over target Hb we have revised the levels in our audit to look at % patients in each unit with Hb ≥ 10 g/dl, Hb 10-12g/dl and Hb >12 g/dl.

F1 Mean Hb of HD patients in each dialysis unit May 2012



Patients with Hb >12.0 g/dL and confirmed as not receiving ESA therapy (90 patients) are excluded from the funnel plot analysis. Portsoy is the only outlier, not falling within 3 SD of the population mean, with a mean Hb 12.4g/dL.

F2 Number of HD patients, median Hb and achievement of audit standards by renal unit May 2012											
	ARI	XH	DGRI	GLAS	MONK	NINE	RAIG	RHSC*	RIE	VHK	Scotland
Number of patients	219	150	50	590	181	181	84	5	266	147	1873
Missing data or recently transfused	7	4	1	9	3	2	3	1	8	3	41
% patients with Hb data	97	97	98	98	98	99	96	80	97	98	96
% total patients with Hb \geq 10g/dL	76	79	94	80	78	90	81	60	85	82	81
% total patients with Hb 10.0-12.0 g/dL	50	54	69	50	54	64	49	50	50	42	52
% total patients with Hb > 12.0g/dL	28	26	26	31	25	27	33	20	36	40	31
Upper quartile	12.1	12.0	12.1	12.2	12.0	12.1	12.1	11.3	12.4	12.4	12.2
Median Hb g/dL	11.2	10.9	11.4	11.3	11.2	11.3	11.5	10.6	11.7	11.7	11.3
Lower quartile	10.1	10.2	10.9	10.2	10.3	10.6	10.4	9.5	10.7	10.6	10.4
Range g/dL	6.8 - 14.6	7.6 - 14.7	8.7 - 13.9	6.2 - 15.3	7.3 - 14.9	7.3 - 18	7.1 - 15	7.6 - 12	6.7 - 14.8	5.4 - 15.7	5.4 - 18

* The standards set for adults are not applicable to children.

Three units, DGRI, NINE and RIE, achieved the NHS QIS standard of 85% of patients with Hb \geq 10g/dL.

The denominator includes those patients for whom data was not available.

81% of patients in Scotland had Hb \geq 10g/dL and 52% achieved a Hb 10.0-12.0g/dL. 312 (17%) patients had a Hb >12.5g/dL of whom 62 were confirmed as not receiving ESA therapy.

SECTION G UREA REDUCTION RATIO

The quality of haemodialysis treatment for ERF can be assessed by measuring the urea reduction ratio (URR). The NHS QIS standard for adult patients is to achieve a URR $\geq 65\%$ in at least 85% of patients. The UKRA guideline for adult patients on three times per week HD is to achieve a URR consistently $>65\%$.

The URR audit was performed in May 2012; all patients in Scotland receiving hospital or home haemodialysis on 02 May 2012 were included in the audit. There were 1776 results from 1873 patients (95%).

More information about the standards and the audit is available on the SRR website.

G1 Number of haemodialysis patients, median URR and achievement of audit standard by renal unit May 2012											
	ARI	XH	DGRI	GLAS	MONK	NINE	RAIG	RHSC*	RIE	VHK	Scotland
Number of patients	219	150	50	590	181	181	84	5	266	147	1873
Number of patients with missing data	15	9	2	28	11	16	5	2	2	7	97
% patients with URR in whom URR $>65\%$	90	92	90	88	85	82	84	33	86	89	87
Upper quartile	76	80	79	79	77	78	77	69	76	75	78
Median URR	73	75	75	75	72	73	73	64	73	72	73
Lower quartile	69	71	71	70	67	68	69	58	68	69	69

* Data for RHSC. The standards set for adult patients are not applicable to children; data are given for reference purposes only.

G2 Mean achieved URR in HD patients in May 2012 by satellite renal unit

