

Section E PERITONEAL DIALYSIS

The prospective national audit of the incidence of episodes of peritoneal dialysis (PD) related peritonitis, adequacy of dialysis and causes of PD technique failure, is reported to the SRR from all adult renal units in Scotland every 6 months. The causative organism and clinical outcome of each episode of peritonitis is recorded.

The standard definition of peritonitis used throughout the duration of the audit can be found on the SRR website: <http://www.srr.scot.nhs.uk/Projects/Projects5.html#periton>

The peritonitis rate data from 01 January 2000 to 31 December 2010 are reported here, along with dialysis adequacy and technique failure data from 2010.

The number of prevalent adult patients on PD fell during 2010 from 290 to 274 while the proportion of PD patients who received APD remained static.

E1 Peritonitis rates in adult renal units 2000-2010				
Renal Unit	Peritonitis rates (months between episodes)			
	Jan 2000 - Dec 2007	Jan 2008- Dec 2008	Jan 2009 - Dec 2009	Jan 2010- Dec 2010
ARI	17.7	23.0	33.3	19.3
XH	27.2	22.8	22.4	20.8
DGRI	29.8	38.6	17.1	24.8
GLAS*	-	-	-	25.2
GRI	19.7	25.9	29.0	-
MONK	28.9	13.5	26.5	17.2
NINE	23.1	31.2	40.3	18.4
QMHD	18.7	27.3	14.5	14.9
RAIG	15.3	23.9	33.2	19.6
RIE	15.6	13.0	15.2	15.5
WIG	19.6	12.7	16.1	-
Scotland	19.9	18.5	20.3	18.9

*The two units in Glasgow (GRI and WIG) merged in 2010 and so data are combined for 2010.

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

There were 176 episodes of PD related peritonitis in 2010.

The causative organisms were:	Coagulase negative Staphylococcus	55 (31%)
	Staphylococcus aureus	23 (13%)
	Gram negative bacilli	23 (13%)
	Other bacteria (e.g. Streptococci)	43 (24%)
	Fungal	5 (3%)
	Culture negative	27 (15%)

Peritonitis accounted for 35/93 (38%) of all PD technique failure during 2010.

Of the 275 patients on PD at the end of June, 18 (6.5%) had a most recent total creatinine clearance less than the UK Renal Association standard of 50L/week/1.73m². Between 01 January 2010 and 30 June 2010 16 patients discontinued PD because of inadequate dialysis and/or poor ultrafiltration. Similarly 9% of prevalent PD patients on 31 December 2010 had a most recent total creatinine clearance <50L/week/1.73m² and 10 patients discontinued PD between 01 July 2010 and 31 December 2010 because of inadequate dialysis and/or poor ultrafiltration.

National peritonitis rates have remained unchanged over more than a decade and every year continue to meet the standard set by the UK Renal Association (less than one episode per patient per 18 months). However there is wide variation in peritonitis rates among units and we plan to review preventative strategies across the country to identify best practice within the units with the lowest incidence of peritonitis.

Peritonitis, inadequacy of dialysis and/ or poor ultrafiltration remain the most common causes of PD technique failure and were the attributed cause in 61 of the 93 PD patients switching to HD in 2010.

Section F ANAEMIA

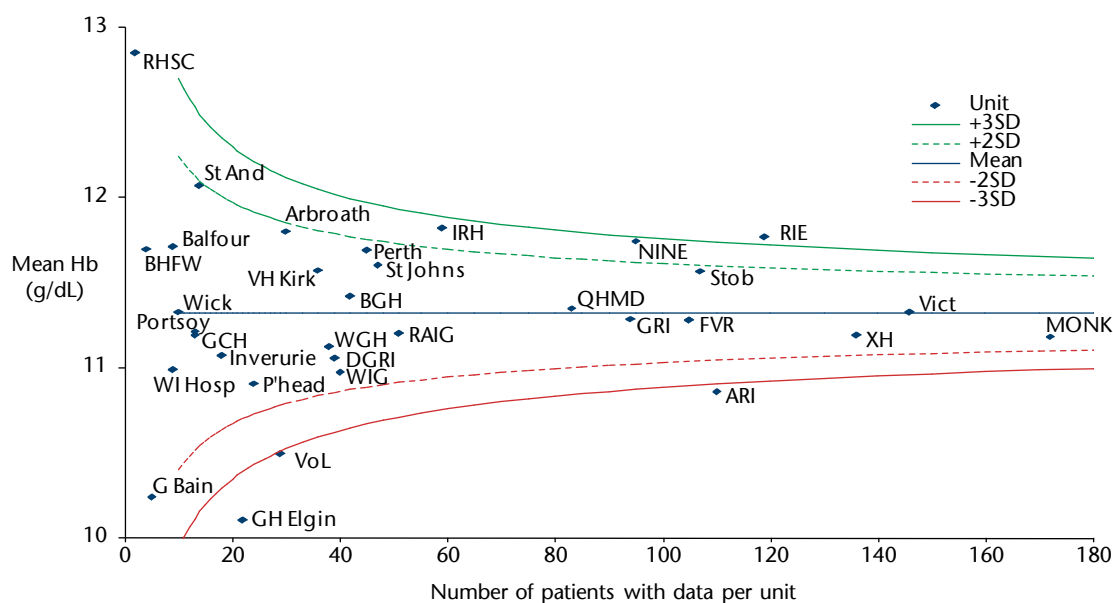
The anaemia audit was performed in May 2011; all patients in Scotland receiving hospital or home haemodialysis (HD) on 02 May 2011 were included. Data were available for 1822 of the 1877 prevalent HD patients (97.1%).

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

The target for achieved haemoglobin in individual patients remains unclear. Healthcare Improvement Scotland, formally known as NHS Quality Improvement Scotland, specify a target of Hb ≥ 10 g/dL in $\geq 85\%$ of patients after 3 months of RRT. The UK Renal Association guideline (version 5) updated in 2010, recommends target Hb of 10-12g/dL 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 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 2011



Mean Hb is reported according to unit (parent or satellite) providing HD in the May 2011 census week. Most of the adult units, and the paediatric unit, lie within 2 standard deviations of the mean (11.3 g/dL) for the whole HD population.

There are 4 outliers who are not within 3 SD of the population mean, GH Elgin with a mean Hb 10.1 g/dL, VoL with a mean Hb 10.5 g/dL, ARI with a mean Hb 10.9 g/dL and RIE with mean Hb 11.8 g/dL.

F2 Number of HD patients, median Hb and achievement of audit standards by renal unit May 2011

	ARI	XH	DGRI	GLAS	MONK	NINE	QMHD	RAIG	RHSC*	RIE	Scotland
Number of patients	212	148	52	624	175	178	139	81	2	266	1877
Number of patients with missing data	6	4	0	22	2	6	6	6	0	3	55
% patients with Hb data	97.2	97.3	100.0	96.5	98.9	96.6	95.7	92.6	100.0	98.9	97.1
% total patients with Hb ≥10 g/dL	73.6	74.3	88.5	78.7	82.9	88.2	84.2	81.5	100.0	83.1	80.5
% total patients with Hb 10-12 g/dL	57.8	42.4	69.2	45.5	56.6	41.9	49.6	65.3	50.0	39.2	48.2
% total patients with Hb >12 g/dL	17.5	33.1	19.2	34.8	26.9	47.8	36.7	21.0	50.0	44.4	33.7
Upper quartile	11.7	12.3	11.5	12.4	12.1	12.6	12.4	11.9	13.7	12.7	12.3
Median Hb g/dL	11.0	11.4	11.1	10.3	11.2	11.9	11.6	11.3	12.9	11.7	11.4
Lower quartile	10.0	10.0	10.5	10.3	10.4	10.8	10.8	10.5	12.0	10.7	10.4
Range g/dL	7.0 - 15.3	6.4 - 14.7	8.8 - 14.3	6.5 - 15.4	7.0 - 15.6	5.1 - 15.4	7.6 - 14.0	8.3 - 14.0	11.2 - 14.5	7.1 - 15.4	5.1 - 15.6

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

Two of the adult units achieved the NHS QIS standard of 85% of patients with Hb ≥10 g/dL. The denominator includes those patients for whom data was not available.

80.5% of patients in Scotland had Hb ≥10g/dL and 48.2% achieved Hb 10.0-12.0 g/dL and 33.7% had Hb >12.0g/dL.

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 2011; all patients in Scotland receiving hospital or home haemodialysis on 02 May 2011 were included in the audit. There were 1795 results from 1877 patients (95.6%).

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 2011											
	ARI	XH	DGRI	GLAS	MONK	NINE	QMHD	RAIG	RHSC*	RIE	Scotland
Number of patients	212	148	52	624	175	178	139	81	2	266	1877
Number of patients with missing data	1	7	0	42	5	3	14	4	0	6	82
% patients with URR in whom URR $>65\%$	85	89	88	89	84	82	78	86	100	84	86
Upper quartile	76	79	79	79	77	79	74	78	81	76	78
Median URR	72	75	75	75	73	75	72	74	79	73	74
Lower quartile	68	70	71	70	68	69	67	69	78	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 2011 by dialysis unit

