

SECTION N SCOTTISH REAL BIOPSY REGISTRY: SURVEY OF NATIVE KIDNEY BIOPSY IN SCOTLAND 2015

All centres in Scotland were able to provide date of birth, sex (except 1 centre), indication for biopsy, operator and major complications and main diagnosis for all native renal biopsies performed in the calendar year 2015. Diagnosis was selected from the 2012 ERA/EDTA primary renal diagnosis codes (<http://www.era-edta-reg.org/prd.jsp>) and this year 'complement 3 glomerulopathy', 'Kidney biopsy result normal' and 'Insufficient histological evidence from kidney biopsy for diagnosis' were added to the list of possible diagnoses. Indication for biopsy, operator and major complications were selected from pre-defined codesets.

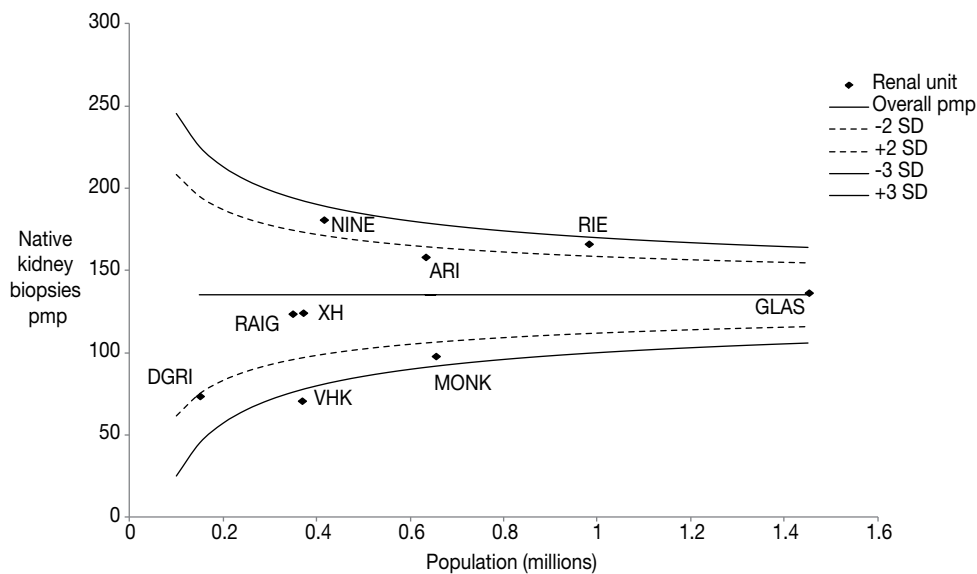
The total number of reported biopsies was 726 in 699 patients giving an incidence of 130.1 per million population (pmp) per year which is slightly higher than the incidence of 127.1 pmp in 2014.

Total number of biopsies and total number of patients having native renal biopsy were expressed pmp for each centre based on the populations shown in N1.

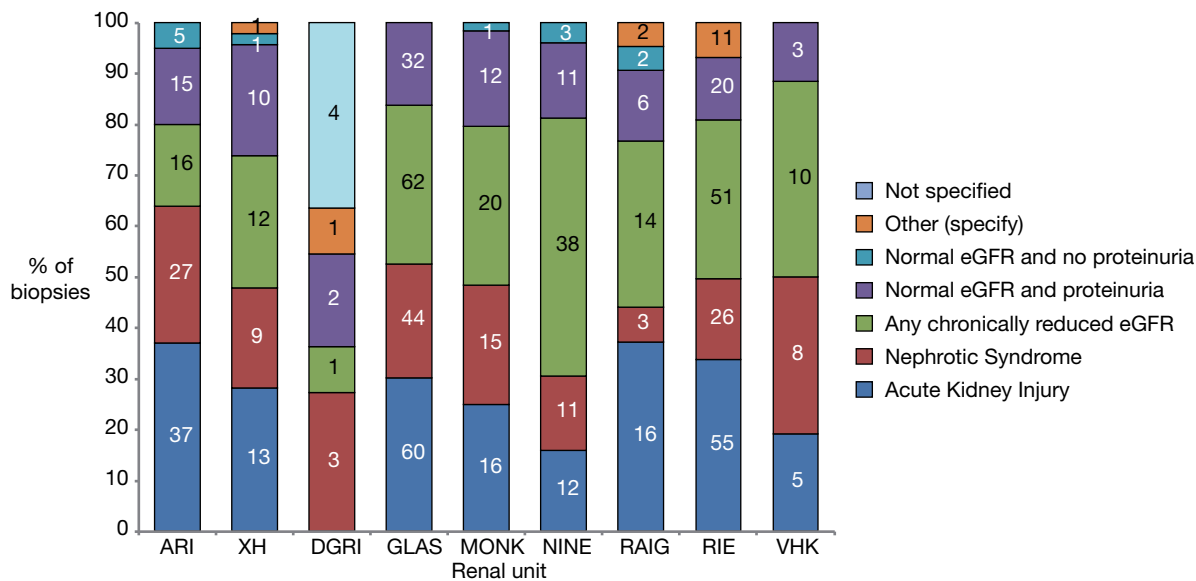
N1 Number of native kidney biopsies 2015 by renal unit and NHS Board									
Renal unit	NHS boards	Population 2015	Total native biopsies	Second or subsequent biopsies	Number patients having biopsy	Native biopsies pmp/yr	Patients having native biopsies pmp/yr	Mean age at biopsy	% Male
ARI	GRAM + SHET + ORKN	632690	100	6	94	158.1	148.6	56.7	54.0
XH	A&A	370590	46	0	46	124.1	124.1	63.5	43.5
DGRI	D&G	149670	11	0	11	73.5	73.5	65.9	72.7
GLAS	GG&C + FV	1452540	198	3	195	136.3	134.2	56.0	60.9
MONK	LAN	654490	64	3	61	97.8	93.2	55.7	62.5
NINE	TAY	415040	75	3	72	180.7	173.5	60.9	68.0
RAIG	HIGH + WI	348070	43	2	41	123.5	117.8	58.3	58.1
RIE	LOTH + BORD	981830	163	10	153	166.0	155.8	54.4	NA*
VHK	FIFE	368080	26	0	26	70.6	70.6	55.1	69.2
Scotland		5373000	726	27	699	135.1	130.1	61.5	59.8

* Sex not available.

N2 Incidence per million population of native kidney biopsies in 2015 by renal unit



N3 Indication for native kidney biopsy in 2015 by renal unit



Indications for native renal biopsy were recorded using pre-defined indication terms.

Diagnosis

Nephrologists were asked to select the diagnosis that was the main explanation for the clinic-pathological features. Only 4 biopsies had no diagnosis recorded.

In 43 cases the diagnosis was recorded as insufficient tissue for diagnosis (most of which had a further biopsy procedure).

For 12 biopsies the diagnosis was recorded as 'Chronic kidney disease (CKD) / chronic renal failure (CRF) - aetiology uncertain / unknown - histologically proven'.

8 biopsies were reported as 'Kidney biopsy result normal'.

Of the remainder a total of 50 different ERA/EDTA Primary Renal Diagnosis terms were recorded as the primary explanation for the clinical indication for native kidney biopsy. In a further 17 cases the nephrologists felt that none of the ERA/EDTA terms were sufficient (recorded as 'other').

The 20 most frequently reported diagnoses are shown in N4 in order of frequency and the frequency of reporting of each diagnosis in 2014 is shown for comparison.

A complete list of all recorded diagnoses and frequencies in each renal unit can be viewed on the Scottish Renal Registry website:

<http://www.srr.scot.nhs.uk/Biopsy-Registry/Main.html>

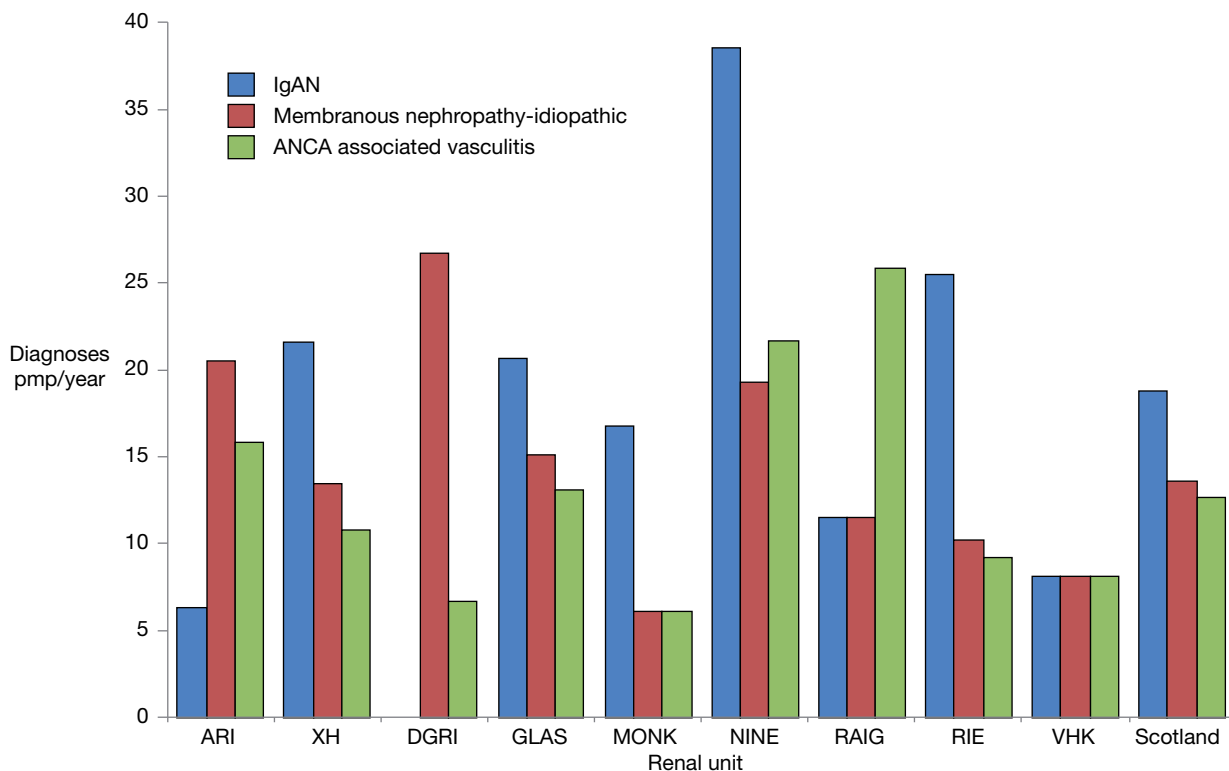
N4 Most frequently reported native kidney biopsy diagnoses recorded in 2015 by renal unit and compared with incidence 2014

	ARI	XH	DGRI	GLAS	MONK	NINE	RAIG	RIE	VHK	Scotland 2015	Scotland 2014
IgA nephropathy	4	8	0	30	11	16	4	25	3	101	101
Membranous nephropathy - idiopathic	13	5	4	22	4	8	4	10	3	73	42
Tubulointerstitial nephritis	3	6	0	16	4	13	2	15	2	61	62
Systemic lupus erythematosus / nephritis	7	2	0	12	4	1	3	10	0	39	28
Microscopic polyangiitis - histologically proven	2	2	1	8	1	4	7	7	2	34	42
Diabetic nephropathy in type I or type II diabetes - histologically proven	3	3	1	15	10	2	3	4	1	42	30
Granulomatosis with polyangiitis	8	2	0	11	3	5	2	1	1	33	34
Primary focal segmental glomerulosclerosis (FSGS)	7	1	0	7	1	5	1	8	1	31	44
Minimal change nephropathy	2	1	1	12	1	2	0	5	4	28	35
Acute kidney injury (acute tubular necrosis)	2	0	0	6	2	0	0	4	0	14	18
Mesangiocapillary glomerulonephritis - not type 2	2	0	0	7	3	0	0	4	2	18	21
Focal and segmental proliferative glomerulonephritis	0	0	0	5	2	0	0	6	0	13	0
AL amyloid secondary to plasma cell dyscrasia	1	3	1	4	1	0	0	2	0	12	7
Chronic hypertensive nephropathy	1	0	0	1	0	5	3	1	0	11	8
Drug-induced tubulointerstitial nephritis	2	2	0	0	0	0	2	5	0	11	0
Henoch-Schönlein purpura / nephritis	1	2	2	0	3	2	0	0	0	10	0
Ischaemic nephropathy / microvascular disease	0	1	0	2	1	2	0	4	0	10	13
Renal amyloidosis ^a	4	1	0	1	0	1	0	0	0	7	10
Complement component 3 glomerulopathy	0	0	0	4	0	0	0	3	0	7	NA
Glomerulonephritis - histologically indeterminate	0	0	0	2	1	1	0	1	2	7	16
Myeloma cast nephropathy - histologically proven	3	0	0	0	0	0	1	2	1	7	8

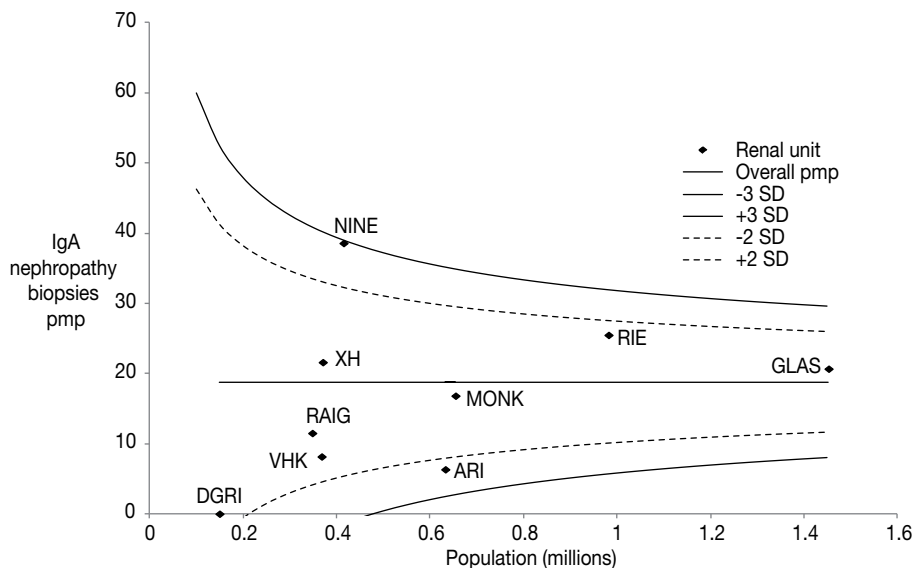
a. Not including AL amyloidosis secondary to plasma cell dyscrasia or AA amyloidosis secondary to chronic inflammation

The incidences of IgA nephropathy, idiopathic membranous nephropathy and ANCA associated vasculitis (a combination of granulomatosis with polyangiitis, microscopic polyangiitis and Churg Strauss syndrome) were expressed pmp and compared between renal units in N5. Funnel plots of the incidence of IgA nephropathy and ANCA associated vasculitis are shown in N6 and N7 respectively.

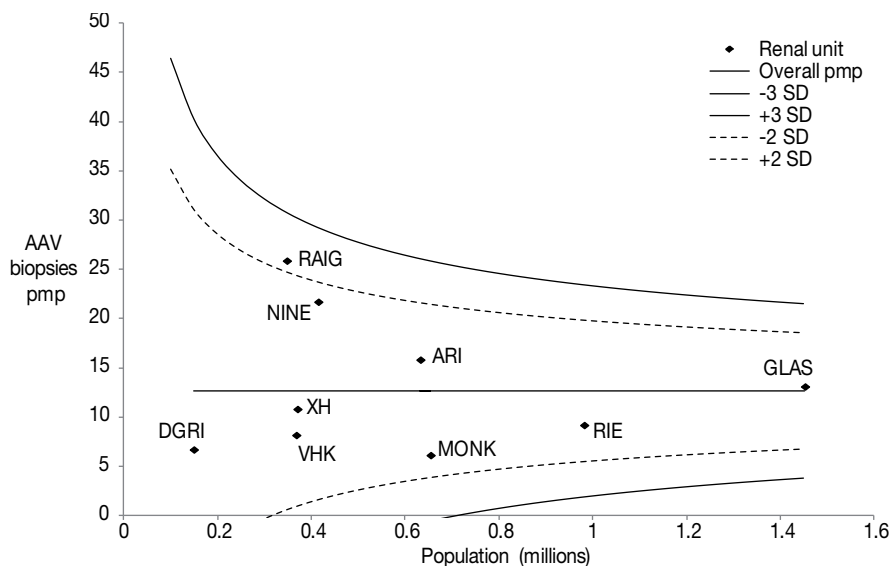
N5 Incidences per million population of selected biopsy diagnoses



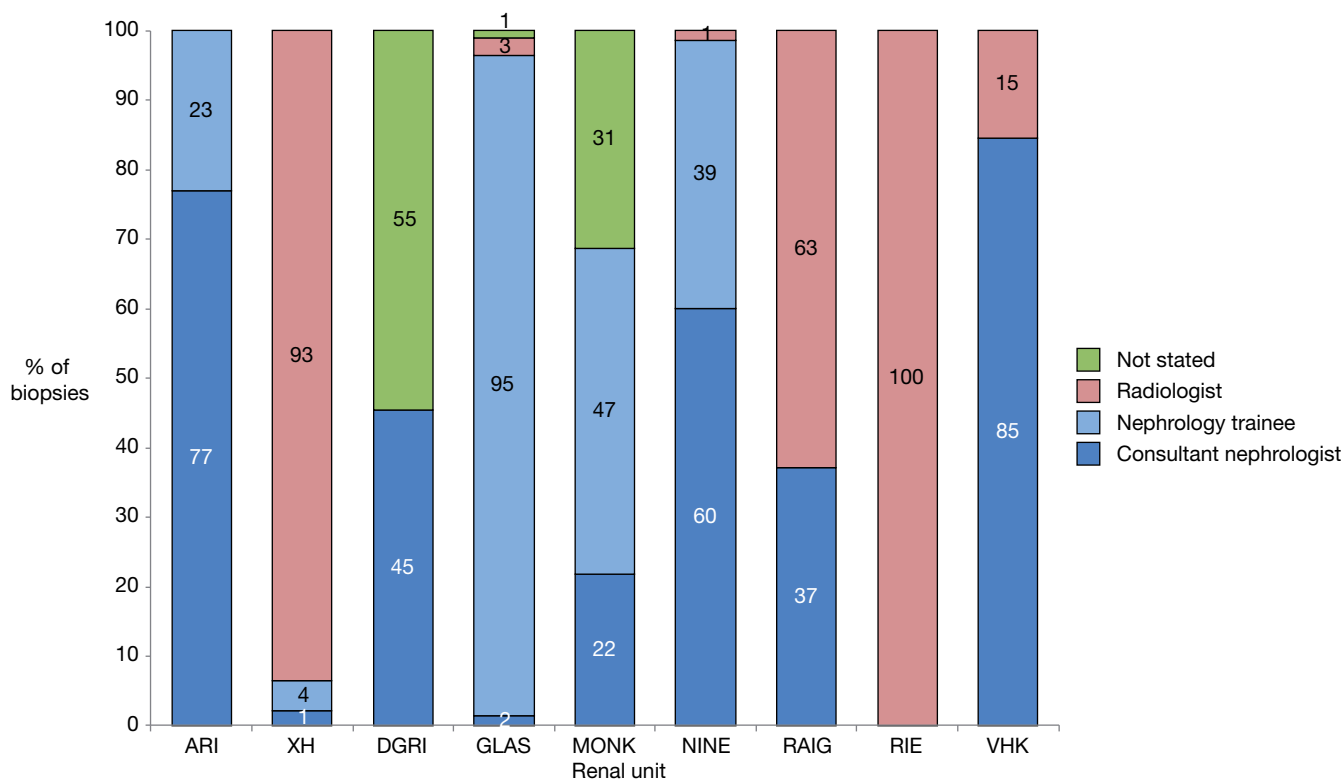
N6 Incidence per million population of biopsy diagnosis of IgA nephropathy by renal unit 2015



N7 Incidence per million population of biopsy diagnosis of ANCA associated vasculitides (AAV) by renal unit 2015



N8 Operator performing native kidney biopsies by renal unit 2015



N9 Major complications of native kidney biopsies in 2015

Complication	Number in 2015
Arteriography and embolisation	6
Arteriography no embolisation	2
Blood transfusion only	3
Clot obstruction managed conservatively	1
Clot obstruction requiring intervention	0
Death	1
Nephrectomy	0
Other	3
Surgery no nephrectomy	0
Total	16

Major complications were defined as shown in N9. There were 16 major complications (2.2%) including 1 death attributed to bleeding after biopsy.