GP Referral to Nephrology in Out Patient Clinic

Regional Clinical Audit Report
2011

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# CONTENTS

Contributors

Executive Summary

1. Introduction and Background 1
2. Aims and Objectives 2
3. Evidence Base 3
4. Standards 4
5. Methodology 5
6. Results Summary 6
   6.1 Information supplied 7
   6.2 Reason for Referral 10
7. Conclusion 12
8. Recommendations 13

Appendix 1 Audit Plan
Appendix 2 Audit Pro-forma
Established in 1992, the North West Renal Audit Programme is a standards based programme of continuous quality improvement through clinical audit. The programme is directed by the North West Renal Audit Steering Group and the daily management carried out by the North West Renal Audit Team with support from other renal professionals.

The following adult renal units took part in the anaemia audit:

- Arrowe Park Hospital
- Aintree University Hospital
- Manchester Royal Infirmary
- Royal Liverpool Hospital
- Salford Royal Hospital

The following people contributed to the data collection and/or analysis for this audit:

- Amanda Greer Balshaw, Royal Liverpool Hospital
- Christopher Goldsmith, University Hospital Aintree
- Rasheeda Kholwadia, Manchester Royal Infirmary
- Peter Maginnis, Manchester Royal Infirmary
- Edmond O’Riordan, Salford Royal Hospital
- Tracey Powell, Manchester Royal Infirmary
- Yasser Shah, Arrowe Park Hospital
1.0 INTRODUCTION & BACKGROUND

GP referral to nephrology is an audit which has been carried out for the first time in the North West due to the interest in the ever increasing rate of GP referrals to renal services. Awareness of chronic kidney disease (CKD) has been prompted by the publication of several large epidemiological studies since 2002. This has led to various initiatives for the early identification and management of CKD, including the introduction of automated glomerular filtration rate (GFR).

There has also been reporting of renal indicators in the primary care quality and outcomes framework (QOF) since April 2006. These initiatives were intended to promote identification of CKD and have had an impact on referral patterns to renal services.

This audit was undertaken because it was identified that there are a number of health and financial benefits for assessing GP referrals which include:

- Improve communication between primary and secondary care
- Improve referral information provided to allow better initial assessment and to avoid unnecessary reduplication of investigations
- Reduce referrals with stable CKD stage 3
- Ensure prompt referral of patients who would benefit from nephrology input

These benefits are also tied in with the financial advantage of saving of time and resources.

It is an important area because it highlights areas in respect of health and wellbeing of the patient, the time constraints of the physicians and the financial aspect of the situation.
2.0 AIMS AND OBJECTIVES

The perception from secondary care is that the lengthy NICE and Renal Association guidelines are not practiced by GPs who are referring patients to Nephrology services. This audit aims to assess the quality of outpatient referrals to Nephrology with respect to relevant clinical information provided with a view to formulating regional guidelines on the management of kidney disease which we hope GPs would find more straightforward.

Aims and objectives are as follows:

- Assess quality of GP referrals to nephrology services across the North West region to see if the relevant information and data is supplied when the referral is made.
- Compare and contrast clinical information provided against renal association and NICE guidelines
- Improve communication between primary and secondary care
- Improve referral information provided to allow better initial assessment and to avoid unnecessary reduplication of investigations
- Ensure prompt referral of patients who would benefit from nephrology input
- Potentially reduce referrals of patients with stable CKD stage 3
- Formulate referral guidance for GPs
3.0 EVIDENCE BASE

- Renal Association guidelines

- NICE guidelines

  www.renal.org/guidelines

- NICE clinical guideline 73 sep 2008
4.0 STANDARDS AND GUIDELINES

The audit looked at the following standards and guidelines relating to GP referrals to nephrology.

People with CKD in the following groups should normally be referred for specialist assessment:

- stage 4 and 5 CKD (with or without diabetes)
- higher levels of proteinuria (ACR 70 mg/mmol or more, approximately equivalent to PCR 100 mg/mmol or more, or urinary protein excretion 1 g/24 h or more) unless known to be due to diabetes and already appropriately treated
- proteinuria (ACR 30 mg/mmol or more, approximately equivalent to PCR 50 mg/mmol or more, or urinary protein excretion 0.5 g/24 h or more) together with haematuria
- rapidly declining eGFR (more than 5 ml/min/1.73 m$^2$ in 1 year, or more than 10 ml/min/1.73 m$^2$ within 5 years)
- hypertension that remains poorly controlled despite the use of at least four antihypertensive drugs at therapeutic doses (see ‘Hypertension: management of hypertension in adults in primary care’ [NICE clinical guideline 34])
- people with, or suspected of having, rare or genetic causes of CKD
- suspected renal artery stenosis.

The following information should be included in the referral according to renal association guidelines:

General medical history - particularly noting urinary symptoms, previous blood pressures, urine testing.
Medication history
Examination
Urine dipstick result for haematuria and quantitation of proteinuria by ACR or PCR
Blood tests - Full blood count, urea and electrolytes. HbA1c if diabetic. If available, calcium, albumin, phosphate, cholesterol.
Previous tests of renal function with dates, back to normal renal function if possible (unless electronically available in specialist centre).
Imaging - results of renal imaging if undertaken
5.0 METHODOLOGY

This was an individual audit looking at a sample size of 100 patients who have been referred to our renal services in either a hub or satellite unit between the period of April 2011 and July 2011. A set proforma was supplied to each unit which needed to be completed by the physician who was reviewing the referral. The data set was compiled using the NICE clinical guidelines 73 for referral criteria.

Data collected included:

- **Reason for referral (which included)**
  - Declining GFR
  - Proteinuria
  - Poorly controlled BP
  - Suspected rare or genetic cause of renal disease
  - CKD stage IV or V
  - Electrolyte abnormality
  - Suspected renal artery stenosis
  - Other

- **Information supplied**
  - Only one eGFR or creatinine
  - >2 eGFR or creatinine readings
  - Urine dipstick or protein quantification
  - Progressive eGFR decline >5mls/min/year or > 10 mls in 5 years
  - If new finding of low GFR was test repeated within 2 weeks?
  - BP
  - Renal imaging
  - Previous medical history
  - Medication list
6.0 RESULTS SUMMARY

Across the North West region all the units participating were asked to collect data on patients attending the outpatient clinic between 1st April and 31st July 2011. The data that was collected was on 88 patients at Aintree, 88 patients at Arrowe Park, 100 patients at MRI, 98 patients at Royal Liverpool and 100 patients at Salford Royal Hospital. These patients were categorised as those who had been referred by their GP, a hospital clinician or from any other source. In figure 1 it can be seen that not all units were able to provide data on 100 patients. Overall there were 474 patients referred in the region in that time period. The clinicians collecting data for the audit at Arrowe Park and MRI only included referrals from GP’s, excluding hospital and other referral sources.

Figure 1: Source of Referral and Number of Patients
Across the region referrals included at least one serum creatinine/eGFR in 32% of cases and 2 or more readings in 47%. However in 21% of referrals overall there was no creatinine/eGFR supplied. This varied across the region with data lacking in 38% of referrals to APH.
Urine dipstick and urine albumin/protein creatinine ratios are simple tests undertaken in order to identify and quantify proteinuria. The presence of proteinuria alongside haematuria points to renal rather than urological pathology. The degree of proteinuria is valuable when assessing cardiovascular risk, deciding on blood pressure targets and which antihypertensive therapy to utilise and also influencing the need for further investigations such as a renal biopsy. However data on these tests was not available in 60% of the patients in the region with all units having similar results.

Only 34% of referrals included evidence of a progressive fall in eGFR of >5mls/min/year or >10mls in 5 years in contrast to 48% of referrals stating the reason for referral as a declining eGFR (see below).

Across the region only a small number of referrals contained evidence that the renal function had been rechecked if there was a new finding of low eGFR.
Hypertension is potentially a sign of underlying renal disease and controlling blood pressure is of benefit in patients with CKD so its presence and chronicity is valuable when initially assessing patients in the nephrology clinic. As seen in fig 8 out of the referrals only 57% of patients had a blood pressure reading supplied. Across the various centres around 16% of referrals were for poorly controlled hypertension. We identified that 11 patients who were referred on the basis of poorly controlled bp did not have a blood pressure reading in the referral notes.

Renal Imaging data was supplied in less than 25% of the patients referred within the region. If already undertaken, supplying reports of renal imaging helps to reduce repeating unnecessary tests and if ordered and undertaken prior to review may speed up initial assessment.

Data on previous medical history of patients was supplied in over 80% of referrals to nephrology centres across the region. However a medication list was not as readily available as it was included in only 52% of referrals to SRH and 79% of referrals across the region. An accurate medication history is vital in order for example to identify potential nephrotoxins, drug allergies/intolerances or to tailor antihypertensive therapy, given patients are not always aware of which drugs they are currently taking or have done in the past.
Data analysis on reason for referral

From observing the graphs below we can see the main reasons stated for referral to our nephrology services where declining eGFR, CKD stages IV and V and proteinuria. The royal Liverpool and Aintree are being referred slightly more patients 45% due to declining eGFR than the other units regionally > 35% according to the information supplied on referral.

A moderate number of patients were referred with poorly controlled hypertension, accounting for 16% referrals to our services regionally, however interestingly a higher percentage of referrals to SRH, 27% were for poorly controlled BP. Smaller numbers of patients were referred with suspected rare or genetic causes of renal disease, suspected renal artery stenosis, electrolyte abnormalities, microscopic haematuria, renal anaemia or renal calculi.

Figure 13: Declining GFR
Figure 14: Proteinuria
Figure 15: Poorly controlled BP
Figure 16: suspected rare or genetic cause of renal Disease
The reasons for the other referrals were split into five main categories. From these it was haematuria that was the most prevalent, followed by cyst and anaemia.
7.0 Conclusions

- Majority of referrals to nephrology service were from primary care.

- Majority of referrals were for reasons recommended by NICE and Renal Association Guidelines. The main reasons for referral where declining eGFR, CKD stages IV and V and proteinuria. 48% patients were referred with declining eGFR however only 34% of referrals contained evidence of a progressive decline of >5ms/min/year or >10mls in 5 years in eGFR. This shortfall may be explained by a lack of information included in the referrals or patients were referred with stable CKD.

- Current and historical creatinines are necessary in order to identify renal impairment and track its progression. However, in the region 22% of referrals did not include serum creatinine/eGFR.

- Less than 40 % of patients had a urine dipstick or quantification of proteinuria available upon referral which influences further investigation and management.

- In the region 57% of the patients referred did not have BP reading in their referral letter. This was also the case when the reason for referral is poorly controlled hypertension.

- A low number of patients have renal tract USS at time of referral. Where available renal uss may be undertaken prior to review to speed assessment but if performed at another hospital report may be unavailable and duplicate testing may have to be necessary.

- Readily available information and that which can be easily carried out such as BP, PMH and drug history omitted from 29% of patients in the region where referrals were made

- Across the region the overall referral patterns were similar. For poorly controlled BP Salford are being referred more patients than any elsewhere in the region. One possible reason for discrepancy in referral rates may be the different sources of referral to each centre. For the purposes of this audit a larger proportion of referrals from a hospital source were analysed at SRH than elsewhere. Also the fact that SRH uses ISOFT for medical records may have resulted in certain information being omitted from referrals as this would be assumed to be readily available to the nephrology team.
8.0 RECOMMENDATIONS

This audit has helped to define the main reasons for referral to our services and this should assist us in planning our outpatient services. When re-auditing in 2012/2013 we plan to include information about demographics and co morbidity in the proforma as this information may highlight the need for changes to the way we deliver care, for example identify a need to expand joint diabetes/renal clinics. (See Appendix 2 for copy of Proforma with proposed changes highlighted in red). Next time we should exclude referrals from other sources than primary care so we can more readily compare data across the centres and feedback more accurately to our GP colleagues.

This audit demonstrates that the majority of referrals from primary care are for appropriate reasons, however a minority of patients may be being referred with stable CKD Stage 3 without another indication for secondary care review according to guidelines. The majority of referrals included information as recommended by renal association guidelines however readily available details were lacking in a minority but significant number. The results and conclusions of our audit have been fed back to primary care physicians via the North West Renal Audit presentation meeting, and will be available on the Greater Manchester Public Health website.

One of our objectives of this audit was to develop regional referral guidelines. The Mersey renal units already have referral guidance for GP’s on their website. Currently consultant nephrologists at SRH and MRI are working with the Greater Manchester Kidney Care Network to develop a CKD algorithm which will assist primary care physicians in managing CKD and providing referral guidance.
## PROBLEM STATEMENT

### Aims and objectives:
- The perception from secondary care is that the lengthy NICE and Renal Association guidelines are not practiced by GPs referring to Nephrology services. This Audit aims to assess the quality of outpatient referrals to Nephrology with respect to relevant clinical information provided with a view to formulating regional guidelines on the management of kidney disease which we hope GPs would find more straightforward.

### Proposed health benefits:
- Improve communication between primary and secondary care ensuring all relevant information required to make an outpatient assessment is included in referral.
- Inclusion of relevant clinical information likely to improve initial medical assessment and may result in fewer reduplication of tests.
- Potential cost savings to Primary Care as management guidelines expected to reduce referrals with stable CKD stage 3.
- Ensure patients who may benefit from secondary care are not missed and referred appropriately (i.e. most patients with CKD stage 4 and 5).

### Evidence base:
- nil

### Priority:
- Regional
- Primary Care

## METHODOLOGY

### Standards:
- NICE Guidelines and Renal Association Guideline adherence.

### Patients:
- 100 clinic patients

### Methods:
- 100 clinic patients referred in the period April 2011 - July 2011
- Data collection form to be completed by physician reviewing referral.
- Each unit to provide details of their referral policies for comparison.
- Data collection forms to be sent to Tracey Powell, Regional Renal Audit Coordinator, c/o Renal Admin, Manchester Royal Infirmary or if using a spreadsheet please send via email to tracey.powell@cmft.nhs.uk or tracey.powell@nhs.net.
| Database parameters: | Source: GP name, Hospital Clinician, Other.  
Reason for referral: declining GFR, proteinuria, poorly controlled BP, identification of hereditary renal disease, CKD stage IV or V, electrolyte abnormality, other.  
Information Supplied: Only one eGFR or creatinine supplied; >2 eGFR or creatinine readings supplied; Urine dipstick or protein quantification; BP; Renal imaging; Previous medical history; Medication list.  
Should any other information have been included?  
Should this referral have been referred as inpatient?  
Any other comments? |
|---|---|
Data collection: 2011 (April to June 2011)  
Data Analysis: Summer/Autumn 2011  
Report published: Winter 2011/2012  
Re-audit: Spring/Summer 2011 |
| ACTION | Proposed date for audit presentation: Summer 2011 Presentation Meeting |
| AUDIT REGISTRATION | Audit Registration completed at unit: MRI / Unit Registration Number: |
### PROJECT PROFORMA

**Audit of GP Referrals to Renal Clinic – 2011 proposed changes in red**

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<th>Suspected rare or genetic cause of renal disease</th>
<th>CKD stage IV or V</th>
<th>Electrolyte abnormality</th>
<th>Suspected renal artery stenosis</th>
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<th>If new finding of low GFR was test repeated within 2 weeks?</th>
<th>BP</th>
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<th>Hx Type 1 or Type 2 DM? state which</th>
<th>Hx HTN/PVD/IHD/CVD? state which</th>
<th>Medication list</th>
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