Protocol Review: Evidence Used and Rationale
Protocol name: Chronic Kidney Disease

Initial Working Group:
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Further review from:
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Rationale for combining proteinuria and CKD protocols

The two previous protocols (PROTEINURIA) and (CKD) were combined for the following reasons:

- Proteinuria is chronic kidney disease, and needs to be considered as such
- There was considerable duplication between the protocols
- The degree of proteinuria is an important risk factor for CKD progression and needs to be reviewed with eGFR in order to assess overall risk

The new protocol aimed to include the content of the two previous protocols, corrected to ensure compatibility with national "CKD Management in GP guidelines" (see references). Monitoring is now based on combined risk assessment as per the above, and does not relate to whether treatment has been initiated.

Specific changes from previous protocols / discussion points:

Case definition:

Changed to risk based case definition include ACR as per "CKD management in GP guidelines" (see references). Removed reference to "normal for age" eGFR as this view is now discouraged.

Screening:

Cut-off ACR values for microalbuminuria and macroalbuminuria:

- Gender specific cut-offs are sometimes used based on populations studies (i.e. 2.5 and 25 mg/mmol for men, 3.5 and 25 mg/mmol for women), however we have chosen to use 3.0 and 30 as a single cut-off to reduce complexity (consistent with KDIGO guidelines, see references).

Use of ACR instead of urine dipstick: As per KDIGO guidelines.
TABLE 2: "Other Causes of Abnormal Kidney Screening Tests and Appropriate Follow-Up"

- Amalgamates STI screening contains some new content
- If removal of content was required to reduce length of protocol, the need for the additional content could be reconsidered as little harm will result if a small number of patients with false positive screening are managed as if they have markers of kidney damage.

Screening tests simplified to be the same for all, regardless of pre-test risk assessment.

Assessment:

Risk factor based approach to haematuria investigation, with emphasis that concurrent infection does NOT preclude malignancy:

- Microhaematuria is common in the Kimberley region (25% of patients on the KRS Kimberley database) – glomerular causes occur frequently, most commonly diabetic nephropathy.
- Cystoscopy indication modified to a risk based approach– consistent with diagnostic imaging pathways (see references).
- As per regional urology advice, the presence of infection should not prevent referral in the case of haematuria as urinary infections are common, and underlying tumours can cause recurrent infection (personal communication from Mr Dickon Hayne).
- Distinction between microscopic and macroscopic haematuria is emphasised.

Uric acid added in work-up (increasing evidence for the benefits of management hyperuricaemia in CKD)**.**
HbA1c guidelines updated for consistency with Diabetes protocol.
ESR removed from standard work-up (rarely done and low utility)**.**

Management

Firmer recommendation against ACE-I/ARB combination therapy

- Risk of AKI biggest concern (rather than risk of hyperkalaemia)
- Although there is some evidence that combination may reduce proteinuria, this has not been shown to improve long term outcomes
- Given widespread confusion about this issue (including patients who remain on dual therapy dating back to previous guidelines) the current safety advice is emphasized

New section: "Prevent Acute Kidney Injury (AKI)"

Revised section: "Managing complications of CKD"

- Now provides more specific and up to date parameters for managing Calcium, phosphate (includes reference to diet) and PTH,
- Includes new content on symptom assessment and advanced care planning
- Medications table updated to include new drugs on the KSDL (e.g. sitagliptin), risk of hypoglycaemia with insulin and commonly overdosed antibiotics (gentamicin, vancomycin)
    - Metformin dosing reviewed in line with new FDA recommendations – no dose adjustment required for eGFR > 45, maximum 1g a day if eGFR 30 – 45.
    - Whilst we use metformin in dialysis patients, and it can likely be safely used at reduce dose in non-dialysis patients with eGFR 15 – 30, we would prefer for this to be discussed on an individual basis (nephrology opinion).
- Iron and anaemia management has been converted from a flow chart to text.

Acceptable creatinine rise after initiation ACE or ARB:

- A conservative figure of 20% was used here – higher cut-offs have been proposed, however we would prefer to receive phone calls / referrals for patients with a rising creatinine who do not require a change of therapy rather than miss someone with progressive disease.

BP management targets:

- We had felt that a BP target of 130/80 was appropriate for our population, as the SPRINT trial excluded diabetic patients, and because our population is at high risk of acute kidney injury from hypotensive events.
- We did put in a caveat to say "unless otherwise specified by physician or nephrologist", and in our refer/discuss section proteinuria > 1g/day is an indication for nephrology referral. I would not be surprised if further evidence emerges over the next two years.

Monitoring

ACR now recommended for both screening and monitoring as per KDIGO guidelines, to enable risk assessment and for simplification.

Refer / Discuss / Resources

KRS contact list to be separate document from this protocol – ideally in future this to have a direct link to an online version, however this is not yet available on the KAMS website.

Referral guidelines for general physician team have been removed and instead throughout the protocol, use of the on-call physician service as needed is encouraged.

Protocol review timeline

Review at chronic disease subcommittee meeting: 11/7/17
Approval through chronic disease subcommittee: 19/7/17
Submission to KAHPF for inclusion on agenda: 20/7/17

Considerations for next review

- Note suggestion from Robyn Powell that instructions for managing unwell CKD patients include a temperature cut-off to send blood cultures, and if CRP elevated to send full septic screen.

Resources and references used in reviewing this protocol:

Chronic Kidney Disease (CKD) Management in General Practice, 3rd Edition 2014, Kidney Health Australia (Available online: http://kidney.org.au/cms_uploads/docs/ckd-management-in-gp-handbook-3rd-edition.pdf accessed 17.3.17).

This protocol was reviewed to be consistent with the above document wherever possible, with variations to accommodate local regional requirements where needed.

KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease, Kidney International Supplements, 3 (1) January 2013.

Diagnostic imaging pathways: http://www.imagingpathways.health.wa.gov.au/index.php/imaging-pathways/urological/painless-microscopic-haematuria#pathway).

CARI guidelines: http://www.cari.org.au/.