Improving Care for Diabetic patients with Chronic Kidney Disease

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Diabetic patients with CKD

- Cardiovascular disease (CVD)
- Hypoglycaemia
- Drug Toxicity
- Acute kidney injury (AKI) – SICKDAY Rules
- Progression End Stage Renal Disease

Evidence that early identification and treatment can prevent or delay progression, can improve CV outcomes
Diabetic patients with CKD G3b (KDIGO)

AIMS

• Improve CV outcomes and Safe
• Kidney Health Check
  * new EMIS template NICE CG182
  * Inform, Empower, Engage
• Improvements are sustained
  * Recall for monitoring
• Foundation for improvement
  * Practice protocol for eGFR’s <45mls/min
  * Annually validate register
  * Invest time to assess and re-assess CKD care
What is CKD?

* Abnormal Kidney Function and/or Structure
* Usually asymptomatic
* 2013 Kidney Disease: Improving Global Outcomes guidance
* <eGFR 60ml/min
* CKD g3b, coded A1/A2/A3
### Classification of chronic kidney disease using GFR and ACR categories

<table>
<thead>
<tr>
<th>GFR and ACR categories and risk of adverse outcomes</th>
<th>ACR categories (mg/mmol), description and range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;3 Normal to mildly increased</td>
</tr>
<tr>
<td></td>
<td>A1</td>
</tr>
<tr>
<td>≥90 Normal and high</td>
<td>G1</td>
</tr>
<tr>
<td>60–89 Mild reduction related to normal range for a young adult</td>
<td>G2</td>
</tr>
<tr>
<td>45–59 Mild-moderate reduction</td>
<td>G3a¹</td>
</tr>
<tr>
<td>30–44 Moderate–severe reduction</td>
<td>G3b</td>
</tr>
<tr>
<td>15–29 Severe reduction</td>
<td>G4</td>
</tr>
<tr>
<td>&lt;15 Kidney failure</td>
<td>G5</td>
</tr>
</tbody>
</table>

¹ Consider using eGFRcystatinC for people with CKD G3aA1 (see recommendations 1.1.14 and 1.1.15)

Increasing risk

Abbreviations: ACR, albumin:creatinine ratio; CKD, chronic kidney disease; GFR, glomerular filtration rate

Kidney Health Check

- Cardiovascular risk reduction
  - Offer Aspirin and Atorvastatin
  - Stop smoking, weight, exercise, alcohol
- Diabetic control
  - Individual target, frailty IDF guidelines
  - Hypo risk – dose adjust insulin/SU of de-prescribe SU
  - SGLT2 - De-prescribe
  - Metformin - Dose adjust
  - DPP4 inhibitors - Dose adjust, or change to Linagliptin
- Blood Pressure
  - BP 130/80 mmHg (140/90 mmHg if prone to falls, orthostatic hypotension)
  - ACR >3 initiate ACEI or ARB
  - titrate BP to Target
Kidney Health Check

- Medication Optimisation
  - De-prescribing - NSAIDs, opioids
  - Dose adjustment - DOAC
  - Gout
- Falls risk
- AKI preventions/CKD progression
  - SICKDAY rules
- Anaemia Hb<110
  - Ferratin, supplementation/Refer
- Recall
  - 6monthly CKDG3b and 4monthly G4
CKD G3b Template

Investigations

Urine albumin:creatinine ratio

Investigations
If ACR 3-70 repeat
Early morning sample/no red meat/hydrated
Sustained eGFR <45ml/min >90days

Check the trend
Code if appropriate
All G3b need a FBC within the last 3 months

CKD G3b A1, A2 or A3

06-Nov-2018

Add a comment
Cardiovascular Risk Reduction

Offer Atorvastatin 20mg OD

Baseline ALT
Recall 3m & 12m ALT & Lipids

Offer Aspirin 75mg OD
Consider bleed risk
>65yrs old offer PPI

CI Cerebral bleed (stroke)
History Gastric bleed
Allergy
Asthma triggered by NSAID/aspirin

Comments
**Diabetes**

**HbA1c Target:**

Medication (SU/Insulin) and co-morbidies

IDF guidelines for older people

Category 1 - Functionally independent 55-56mmol/l

Category 2 - Functionally dependent 53 -64mmol/l

Sub-Category A: Frail up to 70mmol/l
Sub-Category B: Dementia up to 70mmol/l (BG 6-15)

Category 3 - End of Life Care - avoid symptomatic hyperglycaemia

HbA1c target level - IFCC standardised

Diabetic medication changes

1) Metformin 500mg BD (max)

2) Stop SGLT2’s

3) Adjust DPP4 Inhibitors/change to Linagliptin
   Alogliptin 12.5mg/day
   Sitagliptin 50mg/day
   Vildagliptin 50mg/day
   Saxagliptin 2.5mg/day

4) Hypo’s - SU and Insulin - dose adjustment/de-prescribe (falls)
Blood Pressure

BP Targets:

CKD: target <140/90Hg
CKD & Diabetic: target <130/80
CKD & ACR >70: target <130/80
CKD & Hypertension: target <130/80

Target systolic blood pressure mmHg
Target diastolic blood pressure mmHg
Blood pressure mmHg

When to start ACE Inhibitor

ACR +70mg/mmol
Diabetes & ACR +3mg/mmol
Hypertensive & ACR +30mg/mmol

If Potassium Level is >5 do not start ACEI
Investigate raised K and manage

Recall 2 weeks U and E
If drop eGFR <25% ok to continue
If rise in Creatinine <30% ok to continue

comment
Medication

**Medication Optimisation**
1. NSAIDs
2. DOAC
   - measure creatinine clearance (wt/serum cr/CrCl)
3. Gout management
4. Falls - SU/Insulin plus opioids
5. OTC medication

**HYDRATION plus Sick Day Rules Discussed (DAMNS Drugs)**
- Diuretics
- ACEI/ARB
- Metformin
- NSAID
- Sulphonylureas/SGLT2’s

Med Changes
Follow up

- Patient "recall" admin: recall 6 monthly for CKD A2 & A3 patients
  - Follow Up: 05-Nov-2018
  - Text:

- Blood test due in 3 months
  - Follow Up: 05-Nov-2018
  - Text:

- Renal follow-up Annual Check
  - Follow Up: 05-Nov-2018
  - Text:

Follow up comments

Referral

Offer a Renal Ultrasound

a) Accelerated Progression CKD
   A sustained decrease in eGFR of +25%/change in category within 12 months or
   a sustained decrease in eGFR of 15ml/min/1.73m² per year

b) Visible or persistent invisible haematuria

c) Symptoms of UT obstruction

Referral Nephrology

Consider co-morbidities/pt choice

a) ACR >70mm/mmol unless caused by diabetes
b) ACR >30mm/mmol plus haematuria
b) Poorly controlled Hypertension (already on +4 drugs)
e) rare/genetic causes of CKD
e) suspected renal artery stenosis
Pt Info: CKD

Acute Kidney Injury
How to keep your kidney safe


* 374 registered diabetics, 33 with CKD G3b
<table>
<thead>
<tr>
<th>Intervention</th>
<th>No Patients</th>
<th>%</th>
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<tbody>
<tr>
<td>BP management</td>
<td>3</td>
<td>9</td>
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<tr>
<td>CV Risk Reduction</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>New Glycaemic Targets set</td>
<td>9</td>
<td>27</td>
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<tr>
<td>Hypoglycaemia management</td>
<td>20</td>
<td>60</td>
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<tr>
<td>De-prescribing</td>
<td>14</td>
<td>42</td>
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<tr>
<td>Dose adjustment</td>
<td>12</td>
<td>36</td>
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<tr>
<td>Anaemia Investigation</td>
<td>11</td>
<td>33</td>
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<tr>
<td>Lifestyle</td>
<td>19</td>
<td>57</td>
</tr>
<tr>
<td>SICKDAY rules</td>
<td>30</td>
<td>90</td>
</tr>
<tr>
<td>Referrals</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>
1) Repeat U and E’s 2wks if new (Exc. AKI) and 3m (sustained drop >90 days)
2) ACR (if 3-69 rpt)
3) FBC

NB: EMS/no red meat/fully hydrated/white top

Code CKD (KDIGO)

Offer Kidney Health Check Appointment
Inform/Empower/Engage

Lifestyle
Smoking
Weight
Alcohol
Exercise

Blood Pressure
Target
ACEI/optimisation

CV Risk
Aspirin
PPI >65yrs
Atorvastatin

Medication
SICKDAY rules
Dose Adjustment
De-Prescribing
Falls
Hypos

Anaemia
Hb<110
Ferratin
Supplementation

Re Call
6 months
4 months
Referral

Offer a Renal Ultrasound

a) Accelerated Progression CKD
   • A sustained decrease in eGFR of +25% and change in category within 12 months or
   • A sustained decrease in eGFR of 15ml/min/1.73m² per year

b) Visible or persistent invisible haematuria with or without proteinurea

c) Symptoms of UT obstruction

Referral Nephrology/diabetic renal (+retinopathy)

a) ACR >70mm/mmol unless caused by diabetes

b) ACR >30mg/mmol plus haematuria

c) Poorly controlled Hypertension (already on +4 drugs)

d) rare/genetic causes of CKD

e) suspected renal artery stenosis

eGFR <30mls/min – case by case basis (mineral and bone investigations)

PTH/Vitamin D/ Calcium/Phosphate
Conclusions

• Patients are *informed, empowered and engaged* positive feedback
• Significant number interventions – controllable risk factors
  * Improved CV outcomes
  * Improve AKI/CKD/ESRD outcomes…
  * Falls reduction – hypo management, med optimisation
  * Improved safety
On our way to sustained improvements
- Recall
- Informing and engaging our patients in monitoring process

Building a strong foundation
- Practice protocol
- Involving all staff
What next...

• CKD G3a with A2/A3
• CKD G4
• Identify high risk patients
  * Previous AKI
  * Hypertensives
  * CVD (IHD, HF)
  * Systemic Lupus Erythematosus
• Opportunist detection haematuria
• Share our learnings/processes with other practices
Extra slides
* **Category 1** - Functionally Independent – target 53-59mmol/l (7-7.5%)
* **Category 2** -Functionally dependent – target 53-64mmol/l (7-8%)
* **Sub-category A** : Frail up to 70mmol/l (8.5%) may be appropriate
* **Sub- category B** : Dementia up to 70mmol/l (8.5%) may be appropriate (aim blood glucose 6-15mmol/l)
* **Category 3** – End of Life Care – Avoid symptomatic hyperglycaemia.
<table>
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<th>Health</th>
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<tr>
<td>O/E - height</td>
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<td>05-Nov-2018</td>
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<td>Smoker</td>
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<tr>
<td>Smoking cessation</td>
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<tr>
<td>Other Info</td>
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</tbody>
</table>
Anaemia

If Hb < 110g/L request Ferritin blood test

If Ferritin is < 22ug/L treat anaemia
Ferrous Fumarate 210mg, twice a day
Recall 3m FBC + Ferritin

If Ferritin is normal
Recall 3m FBC + Ferritin

NB: Consider referral to Nephrology if Ferritin normal and Hb continues to be low

Haemoglobin estimation

add comment