KDIGO 2012 CLINICAL PRACTICE GUIDELINE FOR THE EVALUATION AND MANAGEMENT OF CHRONIC KIDNEY DISEASE

Supplemental Tables
January 2013
Supplemental Table 1. Search Strategy

1. exp kidney glomerulus/
2. exp kidney disease/
3. exp kidney function tests/
4. exp renal replacement therapy/
5. exp kidney transplantation/
6. exp kidney, artificial/
7. renal.af. or renal.tw.
8. kidney.af. or kidney.tw.
9. or/1-8
10. limit 9 to humans
11. limit 9 to (guideline or meta analysis or practice guideline or "review")
12. 10 not 11
13. glomerular filtration rate.af. or glomerular filtration rate.tw.
14. gfr.af.
15. exp kidney function tests/
16. serum creatin$.af. or serum creatin$.tw.
17. creatin$.af. or creatin.tw.
18. cystat$.af. or cystat$.tw.
19. or/13-18
20. predict$.af.
21. formula.af.
22. equation.af.
23. exp regression analysis/ or regression analysis.mp.
24. 20 or 21 or 22 or 23
25. 12 and 19 and 24
26. limit 25 to yr="1999-2011"

CKD–Allopurinol
1. randomized controlled trial.pt.
2. controlled clinical trial.pt.
3. randomized controlled trials/
4. Random Allocation/
5. Double-blind Method/
7. clinical trial.pt.
8. Clinical Trials.mp. or exp Clinical Trials/
10. ((singl$ or doubl$ or trebl$ or tripl$) adj (mask$ or blind$)).tw.
11. Placebos/
12. placebo$.tw.
13. random$.tw.
14. trial$.tw.
15. (randomized control trial or clinical control trial).sd.
17. Comparative Study.tw. or Comparative Study.pt.
18. exp Evaluation studies/
19. Follow-Up Studies/
20. Prospective Studies/
21. (control$ or prospectiv$ or volunteer$).tw.
22. Cross-Over Studies/
23. or/1-22
24. exp kidney glomerulus/
25. exp kidney diseases/
26. exp kidney function tests/
27. exp renal replacement therapy/
28. exp kidney transplantation/
29. exp kidney, artificial/
30. exp ultrafiltration/
31. exp sorption, detoxification/
32. renal.af. or renal.tw.
33. nephro$.af. or nephro$.tw.
34. kidney.af. or kidney.tw.
36. h?emodialysis.af. or h?emodialysis.tw.
37. (hemofiltr$ or haemofiltr$).af. or (hemofiltr$ or haemofiltr$).tw.
38. or/24-37
39. allopurinol.af. or allopurinol.tw.
40. 38 and 39
41. 23 and 40
42. limit 41 to humans
CKD-Acidosis
1. randomized controlled trial.pt.
2. controlled clinical trial.pt.
3. randomized controlled trials/
4. Random Allocation/
5. Double-blind Method/
7. clinical trial.pt.
8. Clinical Trials.mp. or exp Clinical Trials/
10. ((singl$ or doubl$ or trebl$ or tripl$) adj (mask$ or blind$)).tw.
11. Placebos/
12. placebo$.tw.
13. random$.tw.
14. trial$.tw.
15. (randomized control trial or clinical control trial).sd.
17. Comparative Study.tw. or Comparative Study.pt.
18. exp Evaluation studies/
19. Follow-Up Studies/
20. Prospective Studies/
21. (control$ or prospectiv$ or volunteer$).tw.
22. Cross-Over Studies/
23. or/1-22
24. acidosis.mp. [mp=ti, ot, ab, nm, hw, kw, ui, an, sh]
25. metabolic acidosis.tw. or metabolic acidosis.af.
26. (acid-base$ adj (balance$ or equilibrium or imbalance or status)).tw. or (acid-base$ adj (balance$ or equilibrium or imbalance or status)).af.
27. or/24-26
28. bicarbonate$.tw. or bicarbonate$.af.
29. bicarbonate.mp. [mp=ti, ot, ab, nm, hw, kw, ui, an, sh]
30. or/28-29
31. 27 or 30
32. exp kidney diseases/
33. exp kidney glomerulus/
34. exp kidney function tests/
35. exp renal replacement therapy/
36. exp kidney transplantation/
37. exp kidney, artificial/
38. exp ultrafiltration/
39. exp sorption, detoxification/
40. renal.af. or renal.tw.
41. nephro$.af. or nephro$.tw.
42. kidney.af. or kidney.tw.
43. ur?emia.af. or ur?emia.tw.
44. h?emodialysis.af. or h?emodialysis.tw.
45. (hemofiltr$ or haemofiltr$).af. or (hemofiltr$ or haemofiltr$).tw.
46. or/32-45
47. 31 and 46
48. 47 and 23
49. Animals/ not humans.mp.
50. 48 not 49
CKD-Gadolinium and Nephrogenic Fibrosing Dermopathy
1. exp kidney glomerulus/
2. exp kidney disease/
3. exp kidney function tests/
4. exp renal replacement therapy/
5. exp kidney transplantation/
6. exp kidney, artificial/
7. exp ultrafiltration/
8. exp sorption, detoxification/
9. renal.af. or renal.tw.
10. nephro$.af. or nephro$.tw.
11. kidney.af. or kidney.tw.
13. or/1-12
14. gadolinium.mp. [mp=ps, rs, ti, ot, ab, nm, hw, ui, an, tx, kw, sh, ct]
15. nephrogenic fibrosing dermopathy.mp. [mp=ps, rs, ti, ot, ab, nm, hw, ui, an, tx, kw, sh, ct]
16. 13 and 14 and 15
Protein Diet

1. exp kidney diseases/
2. exp kidney glomerulus/
3. exp kidney function tests/
4. kidney transplantation.mp. or exp kidney transplantation/
5. ((kidney or renal) adj (transplant$ or recipient$)).tw.
6. or/1-5
7. exp diet/
8. exp diet therapy/
9. exp diet, protein-restricted/
10. or/7-9
11. 6 and 10
12. randomized controlled trial.pt.
13. controlled clinical trial.pt.
14. randomized controlled trials/
15. Random Allocation/
16. Double-blind Method/
17. Single-Blind Method/
18. clinical trial.pt.
19. Clinical Trials.mp. or exp Clinical Trials/
21. ((singl$ or doubl$ or trebl$ or tripl$) adj (mask$ or blind$)).tw.
22. Placebos/
23. placebo$.tw.
24. random$.tw.
25. trial$.tw.
26. (randomized control trial or clinical control trial).sd.
27. (latin adj square).tw.
28. Comparative Study.tw. or Comparative Study.pt.
29. exp Evaluation studies/
30. Follow-Up Studies/
31. Prospective Studies/
32. (control$ or prospectiv$ or volunteer$).tw.
33. Cross-Over Studies/
34. or/12-33
35. 11 and 34
36. Animals/ not humans.mp. [mp=ps, rs, ti, ab, nm, hw, ui, tx, kw, ct]
37. 35 not 36
38. (guidelines or meta analysis or practice guideline or "review" or review).mp.
39. 37 not 38
<table>
<thead>
<tr>
<th>Study, Year (Reference)</th>
<th>Equation Name</th>
<th>Expression</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cockcroft and Gault, 1976&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Cockcroft-Gault</td>
<td>CrCl in ml/min</td>
<td>(140 - age) × weight/(72 × SCr) × 0.85 (if female) SCr in mg/dl</td>
</tr>
<tr>
<td>Levey et al, 2006&lt;sup&gt;3&lt;/sup&gt;</td>
<td>4-variable MDRD</td>
<td>GFR in ml/min per 1.73 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>186 × SCr&lt;sup&gt;-1.154&lt;/sup&gt; × age&lt;sup&gt;-0.203&lt;/sup&gt; × 0.742 (if female) SCr in mg/dl</td>
</tr>
<tr>
<td>Levey et al, 1999&lt;sup&gt;4&lt;/sup&gt;</td>
<td>6-variable MDRD</td>
<td>GFR in ml/min per 1.73 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>170 × SCr&lt;sup&gt;-0.999&lt;/sup&gt; × age&lt;sup&gt;-0.176&lt;/sup&gt; × 1.180 (if black) × 0.762 (if female) × BUN&lt;sup&gt;-0.170&lt;/sup&gt; × albumin&lt;sup&gt;0.318&lt;/sup&gt; SCr in mg/dl, BUN in mg/dl, and albumin in g/dl</td>
</tr>
<tr>
<td>Ma et al, 2006&lt;sup&gt;5&lt;/sup&gt;</td>
<td>Chinese-modified MDRD</td>
<td>GFR in ml/min per 1.73 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1.233 × 186 × SCr&lt;sup&gt;-1.154&lt;/sup&gt; × age&lt;sup&gt;-0.203&lt;/sup&gt; × (0.742 if female) SCr in mg/dl</td>
</tr>
<tr>
<td>Rule et al, 2004&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Quadratic equation by Rule</td>
<td>GFR in ml/min per 1.73 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>exp[1.911 + (5.249/SCr) - (2.114/SCr&lt;sup&gt;2&lt;/sup&gt;) - 0.00686 × age - 0.205 (if female)] SCr in mg/dl</td>
</tr>
<tr>
<td>Jelliffe, 1971&lt;sup&gt;7&lt;/sup&gt;</td>
<td>Jelliffe, 1971</td>
<td>CrCl in ml/min</td>
<td>Men: (100/SCr) - 12 SCr in mg/dl</td>
</tr>
<tr>
<td>Jelliffe, 1973&lt;sup&gt;8&lt;/sup&gt;</td>
<td>Jelliffe, 1973</td>
<td>CrCl in ml/min</td>
<td>[96 - 0.8 × (age - 20)] / SCr (0.9 if female) SCr in mg/dl</td>
</tr>
<tr>
<td>Mawer et al, 1972&lt;sup&gt;9&lt;/sup&gt;</td>
<td>Mawer</td>
<td>CrCl in ml/min</td>
<td>Men: weight × [29.3 - (0.203 × age)] × [1 - (0.03 × SCr)] / (14.4 × SCr) × weight/70 SCr in mg/dl</td>
</tr>
<tr>
<td>Hull et al, 1981&lt;sup&gt;10&lt;/sup&gt;</td>
<td>Hull</td>
<td>CrCl in ml/min</td>
<td>[(145 - age)/SCr - 3] × (weight/70) × 0.85 (if female); SCr in mg/dl</td>
</tr>
<tr>
<td>Gates, 1985&lt;sup&gt;11&lt;/sup&gt;</td>
<td>Gates</td>
<td>CrCl in ml/min</td>
<td>Men: (89.4 × SCr&lt;sup&gt;-1.3&lt;/sup&gt;) + ([55 - (age × 0.447 × SCr&lt;sup&gt;-1.1&lt;/sup&gt;)] Women: (60 × SCr&lt;sup&gt;-1.3&lt;/sup&gt;) + ([56 - age] × (0.3 × SCr&lt;sup&gt;-1.1&lt;/sup&gt;)) SCr in mg/dl</td>
</tr>
<tr>
<td>Bjornsson et al, 1983&lt;sup&gt;12&lt;/sup&gt;</td>
<td>Bjornsson</td>
<td>CrCl in ml/min</td>
<td>Men: [27 - (0.173 × age)] × weight × 0.007/SCr SCr in mg/dl</td>
</tr>
<tr>
<td>Walser et al, 1993&lt;sup&gt;13&lt;/sup&gt;</td>
<td>Walser</td>
<td>GFR in ml/min</td>
<td>Men: 7.57/SCr - 0.103 × age + (0.096 × weight) - 6.66 Women: 6.05/SCr - 0.08 × age + (0.08 × weight) - 4.81 SCr in μmol/l</td>
</tr>
<tr>
<td>Nankivell et al, 1995&lt;sup&gt;14&lt;/sup&gt;</td>
<td>Nankivell</td>
<td>GFR in ml/min</td>
<td>(6.7/SCr) + (weight/4) - (BUN/2) - (100/height&lt;sup&gt;2&lt;/sup&gt;) + [35 (if male) or 25 (if female)] SCr in μmol/l and BUN in mmol/l</td>
</tr>
<tr>
<td>Imai et al, 2007&lt;sup&gt;15&lt;/sup&gt;</td>
<td>JSN-CKDI</td>
<td>GFR in ml/min per 1.73 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1.223 × 186 × SCr&lt;sup&gt;-1.154&lt;/sup&gt; × age&lt;sup&gt;-0.203&lt;/sup&gt; × 0.742 (if female) SCr in mg/dl</td>
</tr>
</tbody>
</table>

### Supplemental Table 3. Equations based on serum cystatin C assays in adults that are not traceable to standard reference material

<table>
<thead>
<tr>
<th>Equation name, reference</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perkins(^{16})</td>
<td>100/(CysC)</td>
</tr>
<tr>
<td>MacIsaac(^{17})</td>
<td>(86.7/CysC)–4.2</td>
</tr>
<tr>
<td>Stevens(^{18})</td>
<td>177.6 x (SCr/88.4)(^{0.65}) x CysC(^{-0.57}) x Age(^{-0.20}) x (0.82 if female)</td>
</tr>
<tr>
<td>Ma(^{19})</td>
<td>169 x (SCr/88.4)(^{-0.608}) x CysC(^{-0.63}) x Age(^{-0.157}) x (0.83 if female)</td>
</tr>
<tr>
<td>Filler(^{20})</td>
<td>91.62 x CysC(^{-1.123}) (LogGFR)=1.962 + [1.123 x log(1/CysC)]</td>
</tr>
<tr>
<td>Le Bricon(^{21})</td>
<td>78/CysC + 4</td>
</tr>
<tr>
<td>Orebro-cyst(^{22})</td>
<td>100/CysC–14</td>
</tr>
<tr>
<td>Hoek(^{23})</td>
<td>80.35/CysC-4.32</td>
</tr>
<tr>
<td>Rule(^{24})</td>
<td>76.6 x CysC(^{-1.16})</td>
</tr>
<tr>
<td>Larsson(^{25})</td>
<td>77.24 X CysC(^{-1.2623}) (Dade Behring CysC calibration)</td>
</tr>
<tr>
<td>Grubb(^{26})</td>
<td>86.49 x CysC(^{-1.686}) x 0.948 [if female]</td>
</tr>
</tbody>
</table>
References


