DEVELOPMENT OF A NEW RENAL PATHOLOGY CODING LIST FOR THE FLEMISH RENAL BIOPSY (FCGG) REGISTRY

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INTRODUCTION AND AIMS

Disease classification systems are increasingly used to encode clinical findings in the electronic health record and/or to document the incidence and prevalence of disease. In Belgium, as in other European countries, the (SNOMED CT based) ERA-EDTA classification is commonly used as lingua franca for coding renal diseases by nephrologists, for instance to register dialysis patients. However, the largely clinical ERA-EDTA classification has limitations, in particular terms of recording pathological diagnoses. Further, not all recognized pathology diagnoses have been established within the SNOMED terminology. In addition, some outdated and imprecise concepts are still used while new etiopathologic entitities have emerged.

METHODS

The Flemish Collaborative Glomerulonephritis Group (FCGG), a joint effort by pathologists and nephrologists, aims to set up a renal biopsy registry in Flanders. To this end, we designed an up-to-date renal pathology coding list, to be used in addition to the more clinically based coding systems (such as ERA-EDTA).

1. Immune complex glomerulonephritis, lupus nephritis
1 a. Class I
1 b. Class II
1 c. Class III
1 d. Class IV
1 e. Class V
1 f. Class VI
1 g. Combination of classes
2. Immune complex glomerulonephritis, infection related
2a. due to a viral infection
2b. due to a bacterial infection
2c. due to other infection (parasitic…)
3. Immune complex glomerulonephritis, IgA nephropathy
3 a. Immune complex glomerulonephritis, Henoch-Schönlein purpura
4. Cryoglobulinemic glomerulonephritis
5. Immune complex glomerulonephritis, fibrillary GN with polyclonal deposits
6. Immune complex glomerulonephritis, other
7. Pauci-immune glomerulonephritis, ANCA-associated
8. Anti-GBM nephritis
9. Glomerulonephritis associated with monoclonal immune depositis
9 a. Proliferative glomerulonephritis (GN) with monoclonal immune depositis
9 b. Fibrillary glomerulonephritis with monoclonal immune deposits
9 c. Immunotactoid glomerulopathy
10. C3 glomerulopathy
10 a. C3 glomerulonephritis
10 b. C3 glomerulopathy
11. Membranous nephropathy
11 a. Membranous nephropathy, primary/idiopathic
11 b. Membranous nephropathy, secondary (excluding lupus, see 1e.)
12. Focal segmental glomerulosclerosis (FSGS)
12 a. Primary/idiopathic FSGS (NOS)
12 b. FSGS, genetic cause
12 c. FSGS, secondary to other, known cause
13. Collapsing FSGS
13 a. Collapsing FSGS, HIVAN
13 b. Collapsing FSGS, other
14. Minimal change disease (MCD)
15. FSGS/MCD
16. Diabetic nephropathy
17. Idiopathic nodular glomerulosclerosis
18. Nephroangiosclerosis
19. Amyloidosis
19 a. AL amyloid
19 b. AA amyloid
19 c. Amyloid, other
20. Light chain cast nephropathy (myeloma cast nephropathy)
21. Light chain proximal tubulopathy
22. Monoclonal immunoglobulin deposition disease
22 a. Light chain deposition disease (LCDD)
22 b. Heavy chain deposition disease (HCDD)
22 c. Light and heavy chain deposition disease (LHCDD)
23. Thrombotic microangiopathy (TMA)
23 a. TMA, hemolytic uremic syndrome (HUS)
23 b. TMA, atypical HUS (aHUS)
23 d. TMA, pre-eclampsia
23 e. TMA, medication-related
23 f. TMA, other
24. Kidney infarction
25. Collagenofibrotic glomerulopathy
26. Fibronectin glomerulopathy
27. Lipoprotein glomerulopathy
28. Thin basement membrane disease
29. Alports's disease
29 a. X-linked
29 b. other
30. Thin basement membrane disease/Alport
31. Nephropathy/findings related to storage diseases
31 a. Fabry's disease
31 b. Glycogen storage disease
31 c. Storage disease, other known cause
32. Diffuse mesangial sclerosis
33. Acute tubular damage/acute tubular necrosis
34. Acute tubulointerstitial nephritis (TIN)
35. Granulomatous TIN
36. IgG4-related TIN
37. Chronic TIN
38. TIN, auto-immune associated (other than IgG4-related)
39. Acute pyelonephritis
40. Xanthogranulomatous pyelonephritis
41. Chronic pyelonephritis
41 a. Chronic pyelonephritis due to reflux nephropathy
41 b. Chronic pyelonephritis, other (known) cause
42. Nephrocalcinosis
43. Oxalate nephropathy
44. Urate nephropathy
45. Myoglobin/haemoglobin cast nephropathy
46. Bile cast nephropathy
47. Pigment nephropathy, other
48. Cholesterol emboli
49. Medication-induced changes (not due to calcineurin-inh, see 50.)
50. Calcineurin-inhibitor toxicity
51. Cystic kidney disease
52. Tumor
52 a. Benign tumor
52 b. Malignant tumor
53. End-stage renal disease (without specific pathology findings)
54. Glomerular pathology, NOS
55. Tubulointerstitial pathology, NOS
56. Normal renal tissue, all techniques performed (IF and EM)
57. Normal renal tissue, not all techniques performed (IF and/or EM)
58. No diagnosis, not representative (not enough renal material)
59. No diagnosis, not all diagnostic modalities available
60. No diagnosis, assessment hindered by technical failure or preanalytical problems

RESULTS

The novel FCGG coding system consists of 60 possible diagnostic entries, organized according to prevailing concepts: (1) proliferative glomerulonephritides (Mayo Clinic/RPS consensus), entities associated with nephrotic syndrome (FSGS, membranous, diabetic nephropathy...), (3) monoclonal gammopathy-associated diseases, (4) vascular kidney diseases, (5) tubulointerstitial diseases, (6) rare and/or hereditary entities, and some categories for uncertain diagnoses. Link to FCGG system:
http://www.nbvn.be/sites/default/files/uploads/fcgg/nbvn_pa_coderingslijst_voor_nefropathologische_codering-1.pdf
All renal pathologists in the Flemish speaking part of Belgium have agreed and are being trained to use the new coding system in their daily practice and deliver a structured report. Peer review is organised to promote diagnostic consistency. Starting from 01/01/2017, the FCGG renal pathology coding system is used in a newly developed Flemish Renal Biopsy Registry, which contains anonymized data on all non-transplant renal biopsies performed within the Flanders/Brussels region. The ERA-EDTA coding will be assigned in addition to the FCGG code to each renal biopsy episode. The Registry also allows coding of multiple disease entities within one biopsy.

CONCLUSIONS

We have designed a new renal pathology coding system along with setting up the Flemish Renal Biopsy Registry. Future efforts will be made to validate the FCGG system for use in renal biopsy registration, and international collaboration is being established.

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