Quiz of the Month

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Questions

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History: A 54-year-old, Hispanic home-maker presents with a 6-week history of worsening pedal edema. Five years previously, she was discovered to have diabetes mellitus and moderately severe hypertension (170/100) on routine health exam, treated with a 1,800-cal ADA diet and lisinopril 10 mg qd. At that time, her serum creatinine was 0.8 mg/dl and her urine was protein-free, with no formed elements on routine urinalysis. She has had sporadic medical exams since, the last being 8 months ago, and was unaware of any interim health problems. Family history is strongly positive for type II diabetes mellitus and coronary artery disease.

Physical examination: Weight 75 kg, height 5'2", BP 142/88, P 92, R 12, T 37°C. Well-developed, moderately obese, otherwise healthy-appearing middle-aged woman in no acute distress. Optic fundi show grade I K-W retinopathy, no microaneurysms, neovascularization, hemorrhages, or exudates. No signs of CHF, adenopathy, skin rash, neuropathy, or arthropathy. Pelvic and rectal exam WNL. 2+ pitting edema of the lower extremities.

Laboratory data: Serum Na 142 mmol/l, K 5.4 mmol/l, Cl 112 mmol/l, tC $< \frac{3}{4}$ 20 mmol/l, random glucose 112 mg/dl, BUN 16 mg/dl, creatinine 1.4 mg/dl, total protein 5.2 g/dl alb 3.2 g/dl, total cholesterol 334 mg/dl, TG 584 mg/dl (nonfasting).

Urinalysis: pH 5.0, sp. gr. 1.012, protein > 300 mg/dl, 5-10 RBC/HPF, 2-4 WBC/HPF, 4-8 hyaline casts/LPF, 0-2 fine granular casts/LPF, occasional mixed cellular cast (probable WBCs and RBCs)/LPF, occasional oval fat bodies and lipid droplets.

Random spot urine: Protein 347 mg/dl, creatinine 82 mg/dl [pr:cr = 4.23].

CBC: WBC 5.2×10^3 cells/ μ l, Hb 13.4 g/dl, Hct 39.6%, Pit 324×10^3 cells/ μ l; cell indices, WBC differential, and peripheral smear unremarkable.

Renal ultrasonography: WNL.

Others: Erythrocyte sedimentation rate (corrected Westergren) 64mm/h, ANA and RF negative, complement profile and serum protein electrophoresis WNL, Hb A_{1c} 7.2%.

1 What is the most likely cause of the proteinuria? a Diabetic glomerulosclerosis
b Membranous nephropathy c Minimal change disease d IgA nephropathy e Other

2 Would you biopsy this patient? a Yes

b No

3 Would you first give a therapeutic trial of prednisone? a Yes

b No

4 Are RBC casts in urinary sediment pathognomonic for inflammatory nephropathy?

a Yes b No

5 Would the definite presence of RBC casts have changed your decision to biopsy this patient?

a Yes b No

6 How much is the incidence of glomerulonephritis increased in diabetic patients?

a Very

b Considerably

c Moderately

d Modestly

e Negligibly

For Answers please see page 537.

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7 What is the most likely cause of the elevated erythro-cyte sedimentation rate?

a Occult collagen-vascular disease

b Occult infection

c Occult malignancy

d Nephrotic syndrome

e Immune-mediated (inflammatory) glomerulonephritis f Other

8 How important is hyperglycemia to the progression of diabetic glomerulosclerosis?

a Very

b Considerably c Moderately d Modestly e Negligibly

9 How important is hyperlipemia to the progression of diabetic glomerulosclerosis?

a Very

b Considerably c Moderately d Modestly e Negligibly

10 How much is the time from onset of diabetes to macro-proteinuria accelerated in Afro-American patients?

a Very

b Considerably c Moderately d Modestly e Negligibly

11 How much is the time from onset of diabetes to macro-proteinuria accelerated in Latino or Native-American patients?

a Very

b Considerably c Moderately d Modestly e Negligibly

12 Are randomly-voided spot-urine protein:creatinine ratios sufficiently reliable quantitative estimates of proteinuria, that they may now be used routinely in place of 24-hour collections?

a Yes

b No

c Never heard of tell of it

13 Can lisinopril cause proteinuria? a Yes, rarely

b No, never c Unknown