

retesting the urine after a week or two of rest. True hematuria can be distinguished from hemoglobinuria and myoglobinuria by urinalysis.

Symptoms of lower urinary tract disorders are dysuria, urinary frequency, urgency, incomplete emptying, hematuria that is most pronounced at the beginning of the stream, as well as a poor urinary stream. Among these disorders are urinary tract infection and prostatic hypertrophy. Hematuria of recent onset noted in the fourth decade of life or beyond should undergo a urologic evaluation and most likely cystoscopic examination of the bladder. However, chronic hematuric conditions may be associated with chronic glomerular disease such as thin basement membrane, hereditary nephritis, or IgA nephropathy. That is why it is so important to search for previous examinations such as insurance, military, or employment exams done in the past to determine if hematuria was present in order to establish chronicity.

ACUTE KIDNEY INJURY

Acute kidney injury (AKI) is defined by the retention of nitrogenous solutes such as urea, uric acid, and creatinine. The creatinine concentration goes up primarily related to the amount of water absorbed along the nephron. Because the urea but not creatinine has a reabsorptive component, the clearance of urea is less than the clearance of creatinine. With a constant catabolic rate, a decrease in glomerular filtration alone will affect the BUN and creatinine proportionately. In contrast, a disorder associated with enhanced urinary concentration (high ADH), in which urea as well as water has increased reabsorption in the process of concentrating the urine, the retention of urea nitrogen exceeds that of creatinine, accounting for an elevated BUN-to-creatinine ratio. Oliguric or oligoanuric states are often characterized as *prerenal*, meaning preglomerular vascular disease or low perfusion states; *renal*, indicating intrinsic renal disease; or *postrenal*, indicating obstructive nephropathy or uropathy (see [Table 308-1](#)).

Prerenal states are often related to a decreased perfusion pressure to the glomerular capillaries or some other interference with filtration. The differential diagnosis includes proliferative GN (the