

AZOTEMIA & ACUTE KIDNEY INJURY

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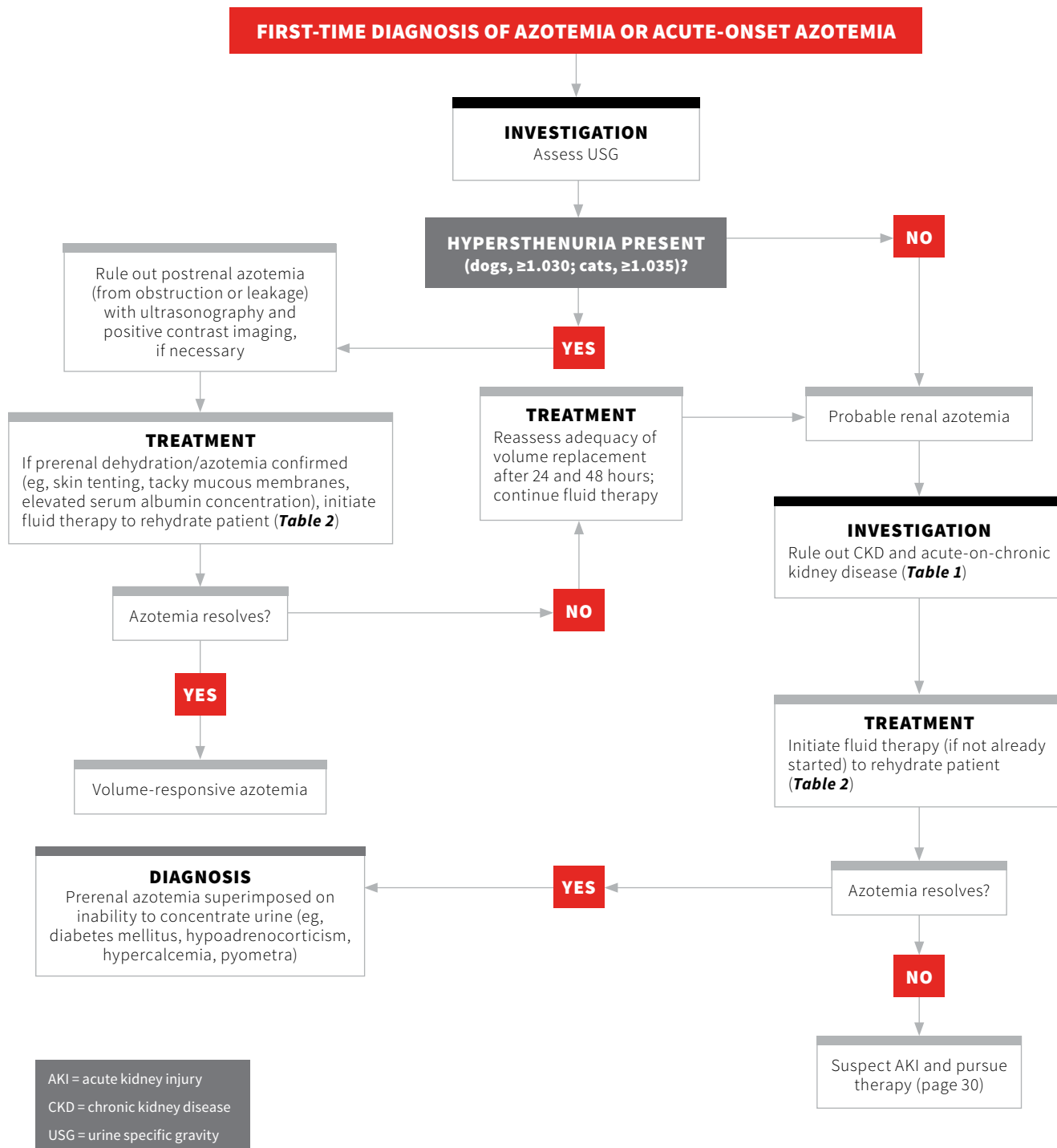


TABLE 1

HISTORY, EXAMINATION, & LABORATORY FINDINGS OF CKD & AKI*

Findings	CKD	AKI
Weight loss, poor coat, poor body condition	+	-
Small, irregular kidneys (on radiography or palpation)	+	-
Nonregenerative anemia	+	-
Acidosis/hyperkalemia	-	+
Oliguria/anuria	-	+
Small, irregular kidneys with hyperechoic cortices with or without loss of corticomedullary junction (on ultrasonography)	+	-
Chronic history of polyuria/polydipsia or stage 1 CKD	+	-
Urine sediment changes compatible with tubular cell damage (eg, granular casts, renal tubular epithelial cells)	-	+
Relatively severe signs for magnitude of azotemia	-	+

*+ = presence more likely; - = presence less likely

TABLE 2

EXAMPLE OF FLUID VOLUME REQUIREMENTS FOR A 20-KG DOG WITH 8% DEHYDRATION & AKI

Deficit needs (8% × 20 kg) over 6 hours	= 1600 mL (replace over 4-6 hours)
Maintenance (60 mL/kg/day)	= 1200 mL/day
Continuing losses (dog vomits 4 times at 100 mL/episode)	= 400 mL/day
Total	= 3200 mL/day (deficit replaced over 4-6 hours if possible)

TABLE 3

HYPOTHETICAL COMPARISON OF TOTAL FLUID NEEDS IN NORMAL, OLIGURIC, & POLYURIC DOGS

	Normal	Oliguric	Polyuric
Invisible fluid needs	20 mL/kg/day	20 mL/kg/day	20 mL/kg/day
Sensible fluid needs (urine output)	40 mL/kg/day	6 mL/kg/day	165 mL/kg/day
Total	60 mL/kg/day	26 mL/kg/day	185 mL/kg/day

Suggested Reading

Cowgill LD, Langston C. Acute kidney insufficiency. In: Bartges J, Polzin D, eds. *Nephrology and Urology of Small Animals*. West Sussex, United Kingdom: Wiley-Blackwell; 2011:472-523.

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Langston C. Acute uremia. In: Ettinger SJ, Feldman EC, eds. *Textbook of Veterinary Internal Medicine*. 7th ed. St. Louis, MO: Saunders Elsevier; 2010:1969-1985.

Ross L. Acute renal failure. In: Bonagura JD, Twedt DC, eds. *Kirk's Current Veterinary Therapy XIV*. St. Louis, MO: Saunders Elsevier; 2009:879-882.

