

## Diagnosis of renal dysfunction in dogs and cats

### General information

The parameters we use to assess kidney function are so-called biomarkers. If the kidney does not work as it should, they remain in the blood. By looking at their levels, we can deduce the severity of renal dysfunction. Sounds simple, and it actually is.

**Azotaemia:** The increase of urinary excreted substances in the blood is called azotaemia. The typical biomarkers are urea and creatinine. However, the presence of azotaemia does not automatically mean that the kidney is affected. Only once we are sure that there is neither prerenal nor postrenal azotaemia, we call it kidney disease.

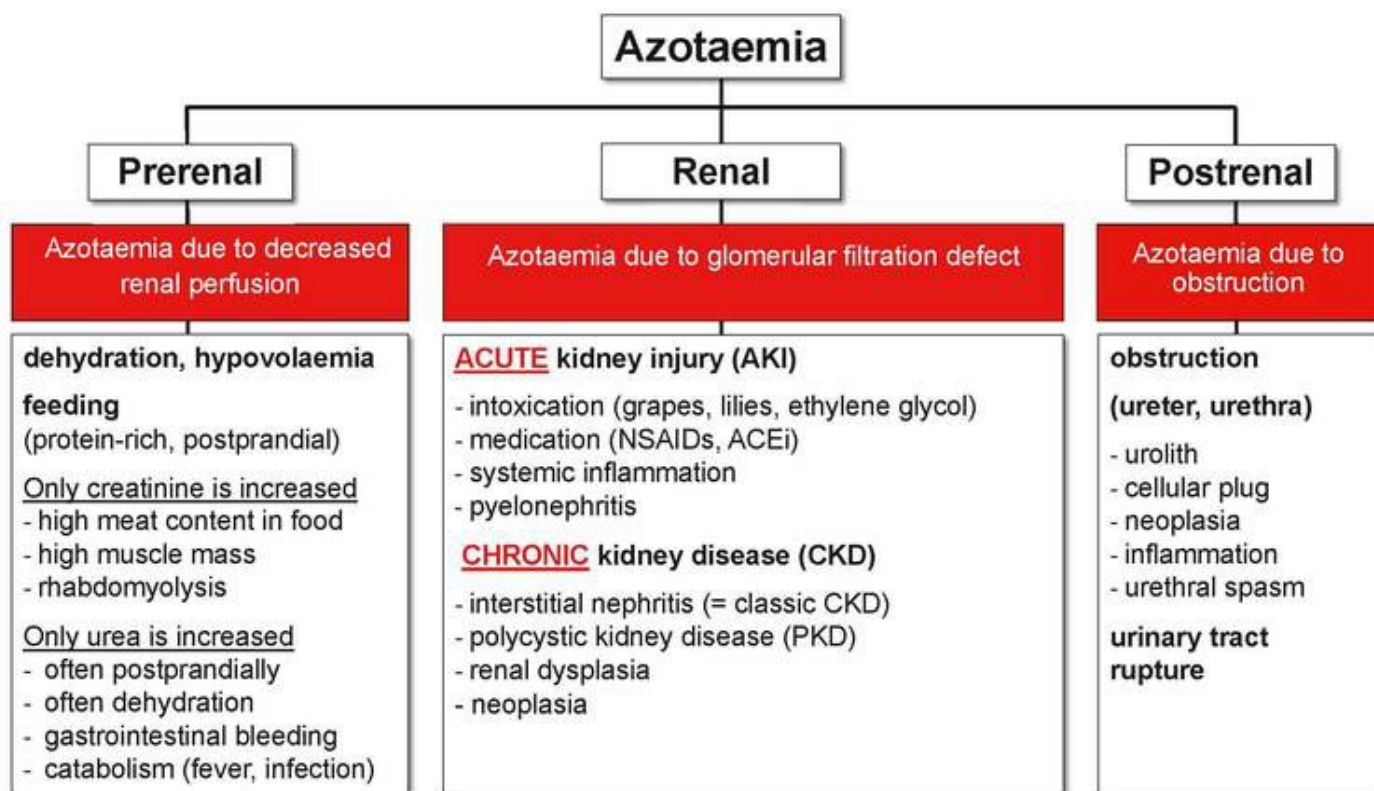


Fig. 1: Differential diagnoses for azotaemia

Source: Dr. Jennifer von Luckner

**Uraemia:** Uraemia is a term used to describe the clinical consequences of renal dysfunction resulting from retention of toxic metabolites, dysregulation of water and electrolyte balance as well as hormonal imbalances. Signs associated with uraemia include lethargy, weakness, dehydration, inappetence, vomitus and weight loss.

Thus, azotaemia and uraemia are not the same. Renal azotaemia indicates renal dysfunction. Uraemia signifies that the patient's quality of life is affected. The former is therefore important for the diagnosis of kidney disease, the latter for assessing the clinically relevant severity of the disease. The

difference between azotaemia and uraemia explains, among other things, why some patients with chronic kidney disease (CKD) still have a rather good general condition even with high kidney values, while others with lower values already feel worse. The traditional biomarkers may be indicators of the degree of renal dysfunction, but do not necessarily indicate what impact this has on the individual patient. For most uraemic toxins that make our patients' lives difficult, there are no commercially available test methods. An exception to this is indoxyl sulphate (see page 3).