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So my cat has chronic kidney disease

What is kidney disease?

Chronic renal (kidney) disease is a progression of changes in the kidneys. If enough kidney damage occurs it will end in kidney failure. The process begins when the kidneys start to not adequately function. Healthy kidneys work to filter toxins out of the blood stream and maintain hydration/ electrolyte concentrations partly through their ability to filter/concentrate the urine. Thus when enough kidney tissue has been lost retention of toxins, electrolyte derangements, and dehydration can occur. Once kidney tissue has been permanently damaged there is no way to reverse the changes. Older cats have a greater chance of having progressive kidney changes over a lifetime that leads to a reduction in kidney function.

What are the clinical signs of kidney disease?

Detectable signs of kidney disease occur when approximately 75 % of kidney function has been lost. The signs of kidney disease widely depend on the severity of the disease present and can include:

- Increase thirst and urination- the kidneys are not able to retain fluid/ filter the blood as they once could causing increased thirst yet at the same time an increase in urination is seen due to the decreased ability to concentrate the urine.
- Weight loss.
- Dehydration- cats may be lethargic, constipated, and have a decreased appetite.
- Oral ulcers – when the disease is severe.

How is kidney disease diagnosed?

To diagnose kidney disease blood work and a urinalysis (urine examination) is needed. A blood pressure is always recommended for cats with suspected kidney disease as some of the regulators of blood pressure come from the kidneys. Thus kidney disease predisposes cats to hypertension or high blood pressure.

What are the common lab findings with kidney disease?

- Increased creatinine- creatinine is produced in the muscle and the kidneys work to filter it out. As creatinine increases in the blood kidney disease is suspected.
- Increase blood urea nitrogen (BUN)- BUN is a waste product that the kidneys work to filter. As BUN increases kidney disease is suspected.
- Low potassium- potassium is an electrolyte that the kidney's reabsorb from urine to maintain a normal level in the body. Kidney disease can result in decreased reabsorption of potassium leading to low blood potassium levels.
- Low urine specific gravity- once 60% of kidney function is lost the kidneys ability to concentrate the urine will decrease.
- High phosphorus- the kidneys are also involved in the regulation of phosphorus, another electrolyte. When 85% of kidney function has been lost phosphorus will increase in the blood.
- Anemia (low red blood cells)- the kidneys produce stimulators of red blood cell production. As the kidneys function decreases so can red blood cell production.

What are the different stages of kidney disease and what do they mean?

There are four stages of kidney disease as designed by the international renal interest society (IRIS) with stage one being clinically healthy cats and stage four being end stage kidney failure. Each stage takes into consideration creatinine (see above), urine concentrating ability (as the kidney function decreases the urine becomes more dilute) and blood pressure, among other things

- Stage 1- clinically normal cat with normal creatinine. May have decreased urine concentration.
- Stage 2- Clinical signs usually mild or absent.
- Stage 3- Many clinical signs present.
- Stage 4- Ill patient with systemic signs present. Quality of life should be evaluated.

What are some common sequels of kidney disease?

- Hypertension- some of the regulators of blood pressure come from the kidneys. When kidney changes occur high blood pressure can result.
- Constipation- kidney disease ultimately leads to dehydration and thus constipation is not uncommon.
- Changes in appetite and sense of smell.
- Weight loss.

What are the treatment options?

There is no true cure or treatment for kidney disease. The goal is to support the cat and his/her kidneys and thus improve quality of life. Each cat needs support in a different way and the plan is tailored to the individual. The goal with supportive care is to slow the disease progression. Here are some common treatments.

- Diet- increase canned food as it has more moisture. A kidney diet or a low phosphorus diet may be recommended depending on your cat's blood work.
- Subcutaneous fluids- this aids in hydrating the cat. We commonly turn to subcutaneous fluids based on the blood work, weight loss, dehydration, and your cat's appetite. We either teach owners to do this at home weekly or you can bring your cat in on a regular basis for fluids.
- Appetite stimulants- kidney disease can affect the appetite. The most commonly used drug is mirtazapine- it comes as a pill or an FDA approved cream you rub on the inside of the ear. Mirtazapine can be given regularly or as needed. It works great to stimulate appetite but can sometimes cause a slight increase in vocalization.
- Anti-nausea- some cats with kidney disease become nauseous. The anti-nausea we typically use is cerenia (pill). It can be given as needed or daily.
- Potassium supplement- this is a paste or pill that is given daily if low potassium is detected.

What type of monitoring is required?

A senior exam and blood pressure every six months is recommended. Blood work and urinalysis is recommended at least yearly.

What if I do not choose to treat my cat?

Kidney disease is progressive (even with supportive care) and over time our patients start to fail. At this point of quality of life decision must be made.

Sources:

- Clinical Veterinary Advisor Dogs and Cats 3rd Edition 2015
- The Feline Patient 4th Edition 2011
- VIN- Chronic Kidney Disease- Contributors- Dr. Kari Rothrock, DVM

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