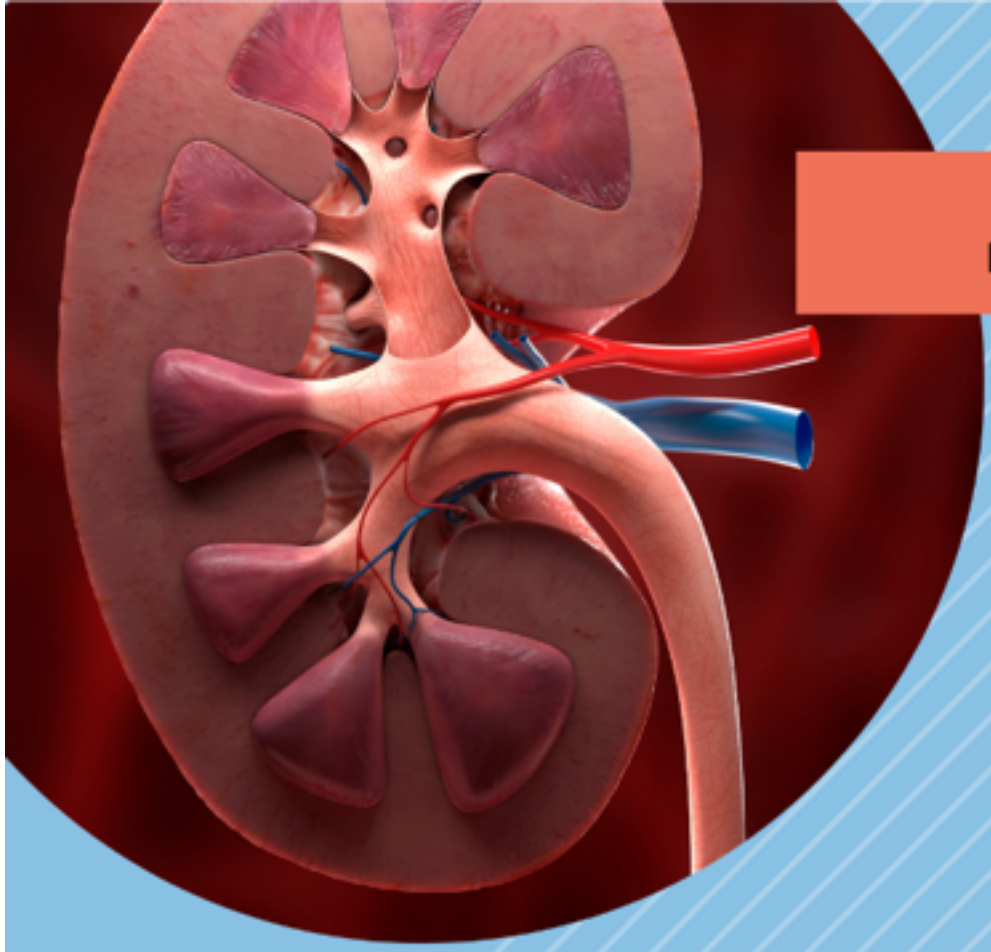

TRUE NORTH
VETERINARY DIAGNOSTICS

WELCOME!

DR. KAREN CARLTON

Karen was born and raised in Scarborough, Ontario. She obtained a Bachelor of Medical Sciences degree from the University of Western Ontario and graduated from the Ontario Veterinary College in 2016. After a year in small animal general practice, Karen returned to the Ontario Veterinary College to complete a residency in Anatomic Pathology and during that time, she lectured in the Doctor of Veterinary Medicine program. Karen moved to British Columbia and joined True North Veterinary Diagnostics as a part-time consultant in 2020. In her free time, Karen plays hockey, enjoys cooking, and fosters cats and kittens through her local humane society with her partner.

True North welcomes Dr. Carlton to the team with great pleasure. She will undoubtedly be a valuable addition for us and your patients.



GUIDE FOR EASY DECISION MAKING

Canine Proteinuria Therapy: Monitoring for Adverse Effects

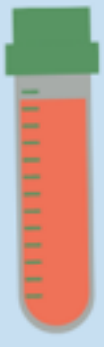
Once a therapeutic has been chosen to treat persistent proteinuria, one should discuss the ideal monitoring schedule.

Angiotensin converting enzyme inhibitors (ACEIs) such as Benazepril or Angiotensin receptor blockers (ARBs) such as Telmisartan have several physiological benefits, but on occasion can have adverse effects.

Adverse effects include increasing creatinine and potassium outside of acceptable limits.

One does not want to see creatinine increase more than 25 – 30% in IRIS Stage 1 or 2 CKD. Stable renal function must be maintained at all times in IRIS Stage 3 and 4 CKD.

As much as it is essential to manage hypertension (a systolic blood pressure over 160 mmHg), we also want to avoid hypotension. A systolic blood pressure should be checked to ensure it is not below 120 mmHg. In well hydrated patients this is not a common concern. ACE inhibitors are not expected to decrease blood pressure by more than 10–15%. Telmisartan does cause natriuresis, and uncommonly can be associated with hypotension.



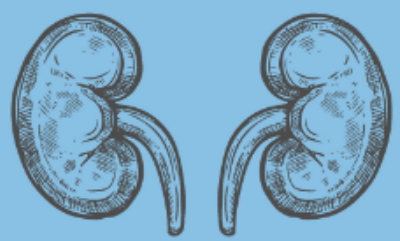
Potassium should be kept below 6.0–6.5 mmol/L. Close monitoring and an ECG is advised if potassium is between 6.0–6.5mmol/L or higher. Running a serum potassium on a heparinized sample can remove the effect of platelet aggregation.

Recommended Monitoring for Adverse Effects Include:

- Check a baseline serum chemistry or renal panel prior to starting ACEI or ARB medication.

- Absolutely make sure **hydration** is adequate prior to starting medication. ACEI or ARB use is contraindicated in any patient that is clinically dehydrated and/or is showing signs of hypovolemia. Complications are far less likely, if a patient is well hydrated and eating well.
- Patients should always be reassessed anytime they are unwell, regardless of guidelines.

IRIS CKD Stages 1 and 2



- Evaluate urea, creatinine, electrolytes and systolic blood pressure within 1–2 weeks after selecting an initial dose.
- If tolerable parameters, recheck again with a UPC in 2–4 weeks.
- In most stable patients this translates to rechecking blood tests at one week and then again with a UPC in 3–6 weeks. Ideally repeat this schedule if any dose increase is needed based upon the UPC or systolic blood pressure.
- If adverse effects are noted, medication should be discontinued and alternative therapy instituted when appropriate. A similar cycle of monitoring is repeated with the new therapeutic.

IRIS CKD Stage 3 and 4

- Urea, creatinine and electrolytes should be checked 3–5 days after therapy initiation or change.
- Smaller starting doses are needed if ACEIs or ARBs are used in these patients.
- Consider a minimum 50% dose reduction when initiating medication in Stage 3 or higher CKD. Dose increases should also be in smaller increments.

Stable patients whose parameters are within acceptable limits and whose UPC has reached the targeted goal, can be checked every 3–4 months.

The general goal for therapy is a serial decline of at least 50% from baseline if a UPC below 0.5–1 cannot be achieved. A pooled urine sample combining equal volume from 2–3 collections over 1–2 days can help address day to day variation. This variation is increased when the UPC is over 4. A significant trend is an 80% or greater change if the UPC is near 0.5 and at least a 35% change if the UPC is near 12.

Vaden SL, Elliott J. Management of Proteinuria in Dogs and Cats with Chronic Kidney Disease. Vet Clin North Am Small Anim Pract. 2016 Nov;46(6):1115-30. doi: 10.1016/j.cvsm.2016.06.009. Epub 2016 Jul 30. PMID: 27485278.

IRIS Canine GN Study Group Standard Therapy Subgroup, Brown S, Elliott J, Francey T, Polzin D, Vaden S. Consensus recommendations for standard therapy of glomerular disease in dogs. J Vet Intern Med. 2013 Nov-Dec;27 Suppl 1:S27-43. doi: 10.1111/jvim.12230. PMID: 24635378.

Lab News

BACTERIOLOGY UPDATE

Has your patient travelled?
Is your patient from a foreign country?
Is your patient a rescue with an unknown history?

For both the **safety of our staff and your team**, be sure to include any and all travel history when submitting samples for culture and sensitivity.

Certain infectious agents from foreign countries are zoonotic, and should be handled under specific laboratory conditions or within specific government infectious disease laboratories.

Submitted culture specimens must have **yes or no noted** with respect to **travel** history. In clinic culture plating is not advised for biosecurity reasons if a patient has travelled to or from a foreign country.
If in doubt – give a shout!

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