

Veterinary Pathology: Supplemental Materials.

Brown et al. Chronic renal changes after a single ischemic event in an experimental model of feline chronic kidney disease.

Supplemental Table S1.

Weekly body weight (kg) in cats following 90 minutes of unilateral renal ischemia (day 0).

Week	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	
Cat Number																										
1	3.08	2.95	3.35	3.60	3.52	3.62	3.62	3.68	3.93	4.02	4.00	4.12	3.64	4.11	4.33	4.31	4.46	4.68	4.69	4.90	4.98	4.98	4.95	4.94	5.15	
2	2.95	2.76	2.95	3.11	3.14	3.12	3.14	3.46	3.62	3.68	3.71	3.76	3.68	3.71	3.72	3.77	3.76	3.86	3.91	4.01	4.05	3.90	3.96	3.90	3.94	
3	4.12	4.00	4.07	4.16	4.19	4.24	4.31	4.42	4.81	4.46	4.59	4.48	5.02	4.93	5.03	5.04	5.05	5.23	5.20	5.05	5.11	5.12	5.14	5.26	5.05	
4	2.58	2.50	2.64	2.90	2.94	3.11	3.24	3.24	3.48	3.61	3.63	3.61	3.74	3.69	3.87	3.82	3.94	4.16	4.22	4.46	4.39	4.23	4.20	4.19	4.33	
5	3.24	3.11	3.43	3.72	3.98	4.04	4.11	4.47	4.69	4.80	4.89	4.96	4.93	4.92	4.98	5.00	5.14	5.15	5.03	4.91	5.21	5.32	4.33	5.21	5.30	
6	2.87	2.65	2.84	2.90	2.94	3.05	3.09	3.30	3.39	3.44	3.41	3.43	3.59	3.60	3.68	3.73	3.77	3.84	3.79	3.84	3.81	3.97	3.98	3.96	4.00	

Supplemental Table S2.

Serum urea nitrogen and creatinine concentration and Urine specific gravity in six cats following

Serum Urea Nitrogen (mg/dL)										
Study Day	-5	1	3	7	30	60	90	120	150	180
Cat Number										
1	21	41	32	31	28	27	28	27	30	27
2	23	23	19	34	29	29	26	23	30	22
3	25	*	23	24	31	31	40	24	23	24
4	29	32	26	27	29	29	30	29	26	27
5	23	26	24	31	32	29	29	25	24	23
6	30	28	31	25	34	35	37	28	28	25
Serum Creatinine Concentration (mg/dL)										
Study Day	-5	1	3	7	30	60	90	120	150	180
Cat Number										
1	1.2	1.3	1.2	1.2	1.1	1.3	1.3	1.4	1.3	1.6
2	1.1	1.3	1.3	1.2	1.2	1.4	1.2	1.6	1.5	1.5
3	1	1.6	1.3	1.5	1.2	1.2	1.7	1.4	1.5	1.4
4	1.1	1.1	1.3	1.2	1.1	1.2	1.3	1.5	n/d	1.6
5	1.2	1.5	1.5	1.4	1.2	1.3	1.4	1.6	1.5	1.7
6	0.9	1.1	1.1	1.2	1.1	1.1	1.2	1.4	n/d	1.4
Urine specific gravity										
Study Day	-5	1	3	7	30	60	90	120	150	180
Cat Number										
1	1.052	1.065	1.049	1.048	1.055	1.060	1.060	1.060	1.062	1.034
2	1.052	1.046	1.063	1.060	1.041	1.055	1.055	1.058	1.058	1.060
3	1.046	1.037	1.053	1.049	1.046	1.052	1.052	1.060	1.065	1.058
4	1.048	1.048	1.050	1.054	1.058	1.058	1.062	1.065	1.065	1.052
5	1.047	1.040	1.045	1.053	1.052	1.060	1.060	1.055	1.060	1.060
6	1.046	1.065	1.057	1.057	1.055	1.055	1.055	1.062	1.055	1.055

90 minutes of unilateral renal ischemia (day 0)

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Supplemental Table S3.

Glomerular filtration rate (ml/kg/min) as estimated by iohexol clearance in six cats that underwent 90 minutes of unilateral renal ischemia (day 0)

Study Day	0	93	% change from baseline	183	% change from baseline
Cat Number					
1	5.214	3.067	-2.147	2.472	-2.742
2	2.493	2.815	0.322	2.522	0.029
3	3.954	3.088	-0.866	2.357	-1.597
4	3.881	3.209	-0.672	3.778	-0.103
5	3.63	3.359	-0.271	2.278	-1.352
6	3.642	1.534	-2.108	2.344	-1.298

Supplemental Table S4.

Urine protein: creatinine in six cats following 90 minutes of unilateral renal ischemia (day 0)

Study Day	-5	90	180
Cat Number			
1	0.11	0.10	0.10
2	0.10	0.18	0.11
3	0.17	0.13	0.09
4	0.16	0.14	0.10
5	0.08	0.06	0.05
6	0.22	0.16	0.10

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Supplemental Table S5.

Doppler blood pressure measurement in awake cats following 90 minutes of unilateral renal ischemia (day 0). Data represents the average of three measurements.

Study Day	-5	7	30	60	90	120	150	180
Cat number								
1	180	165	135	123	155	138	139	145
2	162	218	180	192	210	190	177	191
3	139	158	160	175	300	142	141	191
4	162	184	160	169	235	110	139	225
5	162	166	200	152	138	165	100	121
6	165	173	159	188	188	160	179	229

Supplemental Table S6.

Kidney weight (g) and kidney volume (cm³) in cats 6 months after 90 minutes of right sided renal ischemia

Kidney weight (g)		
Cat Number	right (Ischemic)	left (contralateral)
1	14.00	13.00
2	10.00	13.00
3	13.00	19.00
4	10.00	15.00
5	14.00	13.00
6	3.00	18.00
Kidney Volume (cm ³)		
Cat Number		
1	19.45	19.00
2	11.19	20.35
3	19.80	26.60
4	13.06	19.68
5	17.00	20.00
6	4.50	36.43

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Supplemental Table S7. Percent of pixels staining positive for Picrosirius red staining (out of 1,920,000 total pixels) in the cortex (c), corticomedullary junction (CMJ), and medulla (m) in 10 20X fields. For each cat and each section of the kidney, the 10 fields were averaged for comparison.

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	Average	CMJ1	CMJ2	CMJ3	CMJ4	CMJ5	CMJ6	CMJ7	CMJ8	CMJ9	CMJ10	Average	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	Average
Cat 1 Left	1.99%	1.43%	2.22%	1.85%	1.37%	1.89%	2.62%	1.42%	1.41%	1.64%	1.78%	2.41%	2.60%	3.19%	1.92%	1.94%	1.28%	0.55%	8.30%	4.37%	1.77%	2.83%	1.89%	1.89%	2.66%	2.62%	5.41%	1.98%	2.38%	2.89%	3.04%	4.52%	2.93%
Cat 1 Right	3.21%	1.81%	3.60%	3.56%	2.89%	2.37%	3.88%	2.25%	3.62%	2.72%	2.99%	3.18%	5.55%	1.76%	2.21%	3.94%	4.09%	1.08%	6.38%	4.34%	2.79%	3.53%	11.84%	7.77%	10.35%	15.73%	9.23%	14.02%	10.55%	10.51%	4.30%	8.43%	10.27%
Cat 2 Left	2.26%	3.55%	2.38%	2.83%	2.20%	2.63%	3.22%	2.56%	4.14%	2.43%	2.82%	0.94%	2.49%	2.33%	1.00%	2.15%	0.89%	3.18%	2.35%	0.89%	1.69%	1.79%	6.14%	4.99%	8.47%	8.92%	5.21%	3.52%	1.87%	1.87%	3.21%	1.75%	4.60%
Cat 2 Right	8.92%	5.39%	5.47%	2.77%	7.35%	5.86%	6.83%	7.16%	9.22%	17.38%	7.64%	6.35%	7.79%	5.21%	4.84%	3.16%	2.53%	8.91%	7.47%	3.23%	3.36%	5.28%	7.55%	12.06%	12.50%	7.10%	9.63%	7.91%	10.50%	10.97%	9.84%	14.50%	10.26%
Cat 3 Left	0.63%	1.60%	2.02%	1.82%	2.26%	1.91%	2.16%	2.06%	3.17%	2.38%	2.00%	4.62%	3.93%	3.68%	7.78%	7.45%	2.94%	3.30%	1.46%	2.30%	3.31%	4.08%	6.80%	2.32%	4.27%	1.61%	6.16%	4.44%	2.42%	1.96%	4.91%	7.85%	4.28%
Cat 3 Right	8.05%	3.74%	5.63%	6.73%	2.31%	6.46%	11.58%	4.82%	13.87%	1.95%	6.51%	13.14%	10.24%	13.28%	10.41%	9.16%	10.40%	9.08%	6.88%	2.58%	2.33%	8.75%	11.60%	13.16%	11.74%	13.82%	11.90%	9.85%	3.02%	15.04%	9.34%	8.94%	10.84%
Cat 4 Left	2.08%	2.82%	2.17%	1.76%	1.27%	1.74%	2.03%	2.31%	2.24%	2.23%	2.07%	12.96%	10.75%	7.22%	5.95%	6.78%	10.37%	9.56%	3.29%	7.30%	8.91%	8.31%	9.62%	11.00%	12.06%	16.25%	16.97%	15.56%	24.12%	16.60%	15.74%	14.42%	15.23%
Cat 4 Right	3.20%	4.12%	3.11%	1.65%	1.34%	2.78%	1.07%	3.48%	2.64%	2.58%	2.60%	10.77%	6.27%	4.97%	7.73%	6.71%	7.48%	14.80%	8.66%	10.66%	9.87%	8.79%	13.56%	7.87%	5.58%	5.88%	5.90%	8.76%	6.41%	9.15%	9.45%	9.25%	8.18%
Cat 5 Left	0.46%	0.61%	1.49%	1.43%	1.62%	1.02%	0.88%	1.31%	0.90%	1.49%	1.12%	2.94%	0.68%	1.22%	1.03%	0.90%	0.93%	1.27%	1.53%	1.78%	1.98%	1.43%	7.40%	8.39%	6.18%	4.94%	2.76%	2.05%	7.75%	6.85%	2.66%	2.10%	5.11%
Cat 5 Right	4.50%	4.92%	2.98%	2.33%	5.14%	4.78%	2.45%	3.41%	2.17%	6.39%	3.91%	6.71%	4.49%	8.19%	3.96%	5.39%	3.37%	1.92%	1.64%	0.96%	3.24%	3.99%	4.40%	4.69%	2.09%	2.93%	2.42%	0.97%	7.04%	2.96%	2.32%	1.74%	3.16%
Cat 6 Left	2.01%	1.54%	2.17%	1.50%	1.57%	2.27%	1.34%	1.86%	2.17%	1.15%	1.76%	2.15%	4.30%	4.02%	2.65%	4.69%	3.06%	2.41%	2.30%	3.45%	3.63%	3.27%	8.62%	9.55%	8.94%	10.72%	12.69%	13.74%	15.56%	14.25%	15.91%	20.44%	13.04%
Cat 6 Right	17.62%	20.78%	20.78%	35.74%	23.97%	23.94%	29.55%	20.65%	26.28%	21.95%	24.13%	11.31%	12.40%	12.06%	12.33%	13.71%	13.74%	15.42%	15.71%	14.42%	17.55%	13.86%	15.14%	15.26%	14.27%	14.19%	13.11%	11.79%	9.80%	13.01%	15.02%	15.19%	13.68%

Supplemental Table S8. Percent of pixels staining positive for smooth muscle actin stain (out of 1,920,000 total pixels) in the cortex (c), corticomedullary junction (CMJ), and medulla (m) in 10 20X fields. For each cat and each section of the kidney, the 10 fields were averaged for comparison.

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	Average	CMJ1	CMJ2	CMJ3	CMJ4	CMJ5	CMJ6	CMJ7	CMJ8	CMJ9	CMJ10	Average	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	Average
Cat 1 Left	1.40%	1.16%	1.42%	1.09%	1.56%	2.01%	1.14%	1.20%	1.14%	1.83%	1.39%	1.70%	1.89%	1.91%	1.33%	2.20%	0.96%	2.20%	1.46%	1.20%	1.48%	1.63%	3.22%	3.10%	2.47%	1.78%	1.67%	1.34%	1.36%	1.26%	2.04%	1.51%	1.98%
Cat 1 Right	2.08%	1.27%	0.83%	1.32%	1.15%	1.80%	1.80%	0.62%	0.75%	0.52%	1.21%	0.37%	0.54%	1.31%	3.31%	0.86%	2.96%	1.38%	1.57%	2.48%	2.97%	1.78%	0.70%	1.00%	1.86%	1.91%	2.86%	2.30%	4.29%	2.41%	3.09%	2.59%	2.30%
Cat 2 Left	0.74%	0.86%	1.51%	1.64%	1.16%	2.10%	1.47%	1.04%	0.86%	0.91%	1.23%	1.66%	1.07%	0.95%	1.55%	1.46%	1.72%	1.02%	1.70%	0.94%	1.04%	1.31%	2.57%	2.40%	3.00%	2.83%	2.33%	2.80%	3.72%	3.04%	3.06%	3.98%	2.97%
Cat 2 Right	1.03%	2.20%	2.49%	1.73%	1.65%	0.79%	1.39%	3.73%	1.09%	1.72%	1.78%	1.92%	4.26%	1.19%	2.40%	2.02%	2.99%	1.37%	2.66%	7.55%	1.33%	2.77%	2.32%	3.33%	3.42%	3.36%	3.64%	2.84%	2.72%	3.41%	2.03%	2.44%	2.95%
Cat 3 Left	0.54%	0.25%	0.74%	0.35%	0.56%	0.79%	0.57%	0.27%	0.36%	0.51%	0.50%	1.53%	3.00%	2.87%	2.04%	1.62%	2.16%	1.60%	0.80%	2.58%	1.60%	1.98%	0.86%	1.17%	1.30%	1.89%	1.27%	2.51%	1.26%	1.11%	1.34%	2.38%	1.51%
Cat 3 Right	2.03%	1.36%	2.41%	7.71%	7.66%	1.30%	7.51%	1.42%	3.14%	2.87%	3.74%	2.70%	5.22%	4.50%	6.28%	9.31%	4.58%	2.16%	5.01%	4.45%	5.63%	4.98%	1.25%	2.26%	1.82%	0.75%	3.42%	2.60%	3.69%	2.90%	2.25%	3.99%	2.49%
Cat 4 Left	1.61%	1.66%	1.46%	1.66%	1.37%	1.23%	1.65%	1.24%	1.71%	1.72%	1.53%	1.34%	1.49%	0.98%	0.95%	1.34%	1.58%	1.39%	2.77%	1.87%	1.45%	1.52%	1.14%	1.11%	1.37%	1.31%	1.36%	1.65%	1.31%	1.94%	1.31%	1.27%	1.38%
Cat 4 Right	1.87%	1.60%	0.96%	1.78%	1.44%	1.48%	2.09%	1.96%	1.79%	2.03%	1.70%	0.89%	1.77%	1.64%	2.75%	1.14%	2.09%	1.78%	2.92%	2.34%	2.21%	1.95%	1.26%	1.04%	1.13%	1.81%	1.76%	1.89%	1.50%	4.33%	2.45%	0.93%	1.81%
Cat 5 Left	0.62%	0.96%	1.28%	1.22%	1.43%	1.09%	0.94%	0.67%	0.90%	0.80%	0.99%	1.90%	1.76%	2.25%	2.26%	1.89%	2.08%	2.07%	1.70%	2.60%	2.42%	2.09%	1.76%	2.02%	1.63%	2.81%	1.53%	2.98%	2.40%	2.24%	1.66%	1.10%	2.01%
Cat 5 Right	0.93%	1.08%	0.41%	0.46%	0.70%	0.39%	0.29%	0.58%	0.40%	1.94%	0.72%	3.05%	5.04%	5.03%	2.51%	2.95%	3.70%	5.23%	3.78%	2.42%	4.79%	3.85%	1.34%	2.22%	1.93%	1.33%	0.79%	1.11%	1.92%	1.29%	1.93%	3.95%	1.78%
Cat 6 Left	1.18%	1.51%	0.67%	0.97%	1.01%	0.80%	0.61%	0.59%	0.76%	0.67%	0.88%	2.36%	1.60%	3.08%	1.27%	1.44%	1.51%	1.32%	0.93%	0.63%	1.16%	1.53%	1.28%	1.27%	3.04%	1.56%	2.02%	1.36%	2.18%	3.19%	2.83%	1.89%	2.06%
Cat 6 Right	1.10%	0.39%	0.33%	0.11%	0.29%	2.50%	2.06%	1.16%	0.91%	2.59%	1.15%	2.28%	1.04%	1.96%	2.39%	3.53%	4.09%	5.05%	7.98%	6.99%	6.15%	4.15%	1.85%	1.85%	3.77%	3.43%	2.36%	1.84%	3.90%	4.05%	3.97%	4.31%	3.13%