MANAGEMENT OF CHRONIC KIDNEY DISEASE IN A SAINT BERNARD WITH INTERMITTENT HEMODIALYSIS AND RENAL DIET

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Chronic kidney disease (CKD) is defined as the presence of structural or functional abnormalities of one or both kidneys that had been present for an extended period. (Polzin, 2011). The disease is irreversible and usually progressive. Its only when 75% of the functional renal mass becomes non-functional, there is a rise in serum creatinine and blood urea nitrogen (BUN) values. As per the International renal interest society guidelines, there are four stages of CKD, Stage 1 and 2 are occult. Stage 3 and 4 are advanced, clinical signs are apparent. In these advanced stages, severe electrolyte imbalances, azotemia, metabolic acidosis, hyperphosphatemia prevail. Supportive therapy with fluids, anti-emetics, gastric protectants usually fail to recover the animal. Extracorporeal renal replacement therapy egIntermittenthemodialysis (IHD) is a viable option for ameliorating the azotemia and other derangements, for stabilising the animal and further maintenance of life. Renal diet also plays a pivotal role in reducing the azotemia and clinical signs in these advanced stages. This paper describes the management of a chronic kidney disease in a young Saint Bernard dog with repeated sessions of IHD and renal diet.

A three-year-old Saint Bernard dog, Brownie, weighing 50kgs, was referred to the Cochin pet hospital for IHD as the dog was not responding to supportive therapy and had progressive azotemia. The dog was weak, had progressive weight loss, anorexia and reduced water intake. Clinical examination revealed emaciation, pale mucous membranes and dehydration (+1). Temperature was normal (102.3^0F). Ultrasonography of the abdomen revealed loss of renal architecture in both the kidneys, loss of cortico-medullary distinction and small sized kidneys. Systemic blood pressure was normal. Urinalysis revealed pale clear urine with a low specific gravity (1.012). Urine output was reduced. Urine protein creatinine ratio was 1.33, with an inactive urine sediment which indicated severe proteinuria, as suggested by Chew *et al*. (2011). The dog was in CKD stage 4 and was subjected to IHD on same day of admission.

InjSodabicarbonate @2mEq/L mixed with normal saline was given over a period of 5 hours along with multivitamin, injondensetron @0.4mg/kg and inj RL were administered in the inter dialysis interval, as supportive therapy. After the third dialysis session, the dog was discharged from the hospital with the owner's consent. The dog was still in CKD stage 4. Supportive fluid therapy with NS and RL and injondansetron @0.4mg/kg iv twice daily, was given to the dog at his residence. The dog was maintained on renal diet. There were no signs of uremic encephalopathy. This finding is in agreement with Jacob *et al* (2002) who reported that feeding a renal diet slowed the decline of renal function in dogs with stage 3 or 4 CKD.

Table. 1: Intermittent Haemodialysis prescription

DIALYSIS SESSION	IHD PRESCRIPTION
SESSION I	BLOOD FLOW RATE Q_B=100ml/min Duration=2 hours, Ultrafiltration rate(UFR)= 250ml/kg/hour
SESSION II	Q_B=150ml/min, Duration=3 hours, UFR=375ml/kg/hour
SESSION III	Q_B=175ml/min, Duration= 4 hours, UFR= 375ml/kg/hour

Table. 2: Pre and post values of serum creatinine, BUN and phosphorous of the three sessions of IHD.

Parameters	1st session of IHD		2nd session of IHD		3rd session of IHD	
	Pre	Post	Pre	Post	Pre	Post
Serum creatinine(mg/dL)	18	12	13	9	10.1	7.4
BUN(mg/dL)	205	160	168	102	112	87
Serum phosphorous(mg/dL)	19	13	14	9.1	9.8	8.2

Summary

An advanced case of chronic kidney disease in a young Saint Bernard was managed only with three sessions of intermittent hemodialysis and using commercial renal diet.

References

Chew, D.J., Dibartola, S.P. and Schenck, P.A. 2011. Canine and Feline Nephrology and Urology.(2nd Ed.). Elsevier, Missouri, 526p.

Jacob. F., Polzin, D.J., Osborne, C.A., Allen, T.A., Kirk, C.A., Neaton, J.D., Lekcharoensuk, C. and Swanson, L.L. 2002. Clinical evaluation of dietary modification for treatment of spontaneous chronic renal failure in dogs. J. Am. Vet. Med. Assoc. 220: 1163-1170.

Polzin, D.J. 2011.Chronic kidney disease in small animals. Vet.Clin.North. Am: Small Anim. Pract.41:15-30.

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