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Chronic renal failure in dogs: A case report

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Abstract

A male dog of 5 year showed history of anorexia, vomiting, drowsy and a normal body temperature. It was tentatively diagnosed the case of renal failure. And for diagnosis owner was advised for test and report revealed that PLT was low. BUN and Creatinine was higher from the normal range. Owner was advised for fluid therapy with ringer lactate 500ml, ranitidine 1 ml and eldervet i.e multivitamin. Ondansetron was advised if vomiting occur.

Keywords: BUN, creatinine, vomiting, PLT

Introduction

Similar to other species of animals, canines are also prone to many systemic diseases. The use of chemicals in modern agriculture and livestock farming is one of the major factor that is responsible for degenerative changes in heart, liver and kidneys and later on encountering a syndrome called renal failure, that leads to multi organ failure and ultimately death. Renal failure is the most common and fatal condition in canine occurring 2-5% (Lund *et al.*, 1999) [3]. It is third leading cause of death in dogs. It mostly occur in age group 6.5 years with 45% cases. Renal failure can be classified as acute renal failure (ARF) and chronic renal failure (CRF) depending upon the nature or onset of disease.

Chronic renal failure is irreversible gradual deterioration of kidney function, occurs without any clinical or biological signs over a long period (months to years). Chronic renal disease is more frequently diagnosed in aged pets (Polzin *et al.*, 1995) [8] and is a common cause of death. There are many potential factors for initial kidney damage, which further leads to chronic renal disease. These factor include renal ischemia (decreased blood flow to the kidneys), trauma, immunological disease, infection, neoplasms, genetic anomalies and exposure to toxins.

History. A male dog of 5 year brought at the clinics. The patient has a history of anorexia, vomiting, drowsy and a normal body temperature.

Haematological, liver and kidney test

Owner was advised for haematological, liver and kidney test. Report of the test revealed that PLT was low. BUN and Creatinine was higher from the normal range.

Table 1: Haematological report

Parameter	Result	Reference interval
HCT	43.3%	37-55
HGB	15 g/dL	12-18
MCHC	34.6 g/dL	30-36.9
WBC	7.80 K/ μ L	6-16.9
NEU	3.77 K/ μ L	2.8-10.5
EOS	1.03 K/ μ L	0.5-1.5
GRANS	4.80 K/ μ L	3.3-12
GRANS	61.5%	74.5
L/M	$3 \times 10^9/L$	$2.5 \times 10^9/L$
L/M	38%	26%
PLT	156 K/ μ L	245 K/ μ L

Table 2: BUN and Creatinine Range

Parameter	Findings	Range
GLU	77 mg/dl	74-143
BUN	30mg/dl	7-27
CREA	2.5mg/dl	0.5-1.8
ALB	3.1g/dl	2.3-4.0
ALT	63U/L	10-100
ALKP	40U/L	23-212

Treatment and Discussion

Owner was advised for fluid therapy with ringer lactate 500ml, ranitidine 1 ml and eldervet i.e multivitamin. Ondansetron was advised if vomiting occur. Decreased appetite, vomiting, lethargy, and weight loss associated with renal failure in dogs due to azotemia/uremia (Polzin, 2010) [8]. Various gastrointestinal complications i.e. inappetence, anorexia, vomiting, diarrhoea, weight loss were very common among chronic renal failure dogs and these are the first signs observed by the owners. Anorexia might be due to gastrointestinal disorder as reported by Mary (1992) [4] and Krawiec (1996) [2]. Cowgill and Francy (2005) [1] observed uremic breath (halitosis) in dogs due to bacterial degradation of urea to ammonia (Nascimento *et al.*, 2009) [5]. Due to uremic gastritis, chronic vomiting is the most common gastrointestinal signs (Peters *et al.*, 2005) [6]. Vomiting in renal failure cases may be due to direct effects of uremic toxins on D2-dopaminergic receptors in the chemoreceptor trigger zone (Washabau and Elie, 1995) [9].

Conclusion

By using several modern techniques, early diagnosis of renal failure can be done easily. But ultra sonographic scanning of kidneys, urinalysis and biochemical estimation are the most common. Clinical manifestations of the disease are also very important feature to diagnose renal affected dogs. There are several renal specific syndromes that can easily be identified by the clinician and can be further confirmed by advanced diagnostic tools and can manage the renal patients accordingly.

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