

RENAL FAILURE – A CLINICAL REPORT OF THREE CASES

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[Received: 26.2.2014; Accepted: 04.6.2014]

Introduction

Renal failure have always remain a major area of concern for clinicians of both Human and animal practice. Incidence of kidney failure in dogs is increasing day by day with the changing life style of today's world. Acute renal failure is defined as an acute decrease in renal function, resulting in a lack of excretion of nitrogenous waste (urea and creatinine) and leading to increase in serum creatinine above the refrence range with no evidence of chronicity (Langston, 2010). When kidney damage occurs, body becomes unable to get rid of excess urine and wastes from the body and blood electrolytes (such as potassium and magnesium) elevated (Gaikwad *et al.*, 2012). Kidney failure not only has significant morbidity, but a high mortality rate (Javaid *et al.*, 2012). Mortality of dogs due to renal failure in Ranchi has been a problem for quite a long time. A considerably large number of cases suffering from renal failure are regularly brought and admitted to Ranchi Veterinary College Hospital, Kanke, Ranchi for treatment.

Case History and Observation

A total of 3 clinical cases between 2-5 years were presented at Clinical complex of Ranchi Veterinary College Hospital, Kanke, Ranchi for treatment with complaint of anorexia, weakness and vomiting. On detailed examination, dogs were found to have subnormal temperature, elevated pulse rate and respiratory rate, dehydration and uremic breath. Haemato-Biochemical, Urine analysis and Ultrasonographic examination revealed dogs suffering from acute renal failure.

Biochemical examination showed BUN level >100mg/dl and Serum creatinine level > 3.0mg/dl. Ultrasonographic observation revealed hyperechoic kidney comparable to liver in 2 cases and no clear-cut demarcation in cortex and medulla was noticed in the other dog. On Urine analysis proteinuria, dark colour urine and presence of cast cells was observed in all the 3 dogs.

Treatment given

All the renal failure dogs were treated with Nefroliv capsule (marketed by Indian Herbs, Saharan Pur) @ 2 capsules p.o., Ringer lactate @ 15ml/kg b.wt. i.v., Dextrose 5% @ 15ml/kg b.wt. i.v., Rantac @ 0.5mg/kg b.wt. im, Ondem 0.3mg/kg b.wt. i.v., Inimox forte @ 300mg i.m and also Peritoneal dialysis was done daily until Serum creatinine and BUN level returned to normal. Haemato-Biochemical, Urine analysis and Ultrasonographic evaluation were performed on day 0, 3, 9 and 15 of observation.

Result and Discussion

In all the 3 cases subnormal temperature, elevated pulse rate and respiratory rate returned to normal after treatment which is in accordance to Mugford *et.al.* (2013), Kumar *et al.* (2011), Ross (2006), Cowgill and Francy (2006). Higher mean values of Hb was observed in all the ARF dogs before treatment due to dehydration and haemoconcentration which in turn may be due to vomiting, diarrhoea and possibly haemorrhage also observed by Mugford *et.al.* (2013), Stanley and Langston (2008), Ross (2006). Neutrophilia and lymphopaenia were consistent findings. Leucocytosis was observed before

treatment in renal failure cases due to inflammation (Mugford *et. al.*, 2013 and Ross, 2006) and typical stress reaction of uremia(Coles, 1986). TLC returned to normal after treatment. The serum creatinine level decreased gradually in all the three dogs on 3rd, 9th and 15th

day of treatment. Increase in BUN level was observed on 0 day of observation which significantly decreased as treatment

Physical and Haemato-biochemical parameters in Dogs with ARF.

DOG	DAY 0	DAY 3 RD	DAY 9 TH	DAY 15 TH
TEMPERATURE (°F)				
1	98.20	99.60	100.80	101.20
2	99.40	99.80	100.60	101.00
3	98.00	99.20	100.40	101.60
PULSE RATE (/min)				
1	107	99	93	87
2	103	96	90	89
3	106	100	91	88
RESPIRATORY RATE (/min)				
1	28	26	26	21
2	26	24	24	22
3	27	23	22	20
HAEMOGLOBIN (gm%)				
1	16.80	11.20	13.60	13.80
2	14.20	13.20	13.40	13.40
3	15.00	12.40	13.60	14.00
TOTAL LEUCOCYTE COUNT (x10 ³ /μl)				
1	31.60	20.40	14.20	11.60
2	20.00	11.20	9.10	7.20
3	21.00	10.60	8.40	7.60
BUN (mg/dl)				
1	218.50	72.43	13.33	9.02
2	104.20	45.86	9.58	8.10
3	132.00	51.40	11.24	8.61
SERUM CREATININE (mg/dl)				
1	11.10	7.65	3.43	1.46
2	3.24	2.33	1.42	0.84
3	5.88	4.97	1.87	0.85

Nefroliv is a polyherbal formulation in which its constituents especially *B. diffusa*, *C. nurvala*, *T. terrestris*, *B. ligulata* and *S. nigrum* have diuretic, anti-inflammatory and nephroprotective effects (Nandy and Pradhan, 2006 and Dey *et. al.*, 2004) that help in correction of damaged renal tubular cells of dogs and enhancing functioning of kidney.

Peritoneal dialysis further decreases serum BUN levels. Scrutu *et al.*, (2008) reported decrease of BUN was

14.8% /dialysis cycle. Hence, it can be concluded that synergistic effect of both Nefroliv and Peritoneal Dialysis results into significantly greater decrease in serum BUN level.

Summary

ARF dogs treated with Nefroliv + Peritoneal dialysis + Fluid therapy showed good and faster recovery which is very important in acute renal failure cases so that dogs

could be recovered in initiation phase of renal failure and do not enter into chronic stage. Also there is rapid decline in renal function over a period of hours to days so faster recovery is a great challenge in treatment of renal failure dogs.

References

- Coles, E. H. (1986). Veterinary Clinical Pathology. 4th edn. W. B. Saunders Company, Philadelphia.
- Cowgwill, L. D. and Franczy, T. (2005). Acute uremia. In: Text Book of Veterinary internal medicine: Disease of the Dog and Cat, 6th ed. (eds. Stephen J. Ettinger and Edward C. Feldman), W.B. Saunder's Company, Philadelphia, pp. 1731-1751.
- Dey, P. C., Nath, B., Nayak, D. C. and Mukherjee, S. K. (2004). Clinical assessment of NephTone for renal disorders in dogs. *Phytomedica*, **5**: 125-128.
- Gaikwad, K., Dagle, P., Choughule, P., Joshi, Y. M. and Kadam, V. (2012). A review on some nephroprotective medicinal plants. *International Journal of Pharmaceutical Sciences and Research*. **3(8)**: 2451-2454.
- Javaid, R., Aslam, M., Nizami, Q. & Javaid, R. (2012). Role of Antioxidant Herbal Drugs in Renal Disorders : An Overview. Free radicals and Antioxidants. **2(1)**: 2-5.
- Kumar, M., Haque, S. and Sharma, A. K. (2011). Continuous Ambulatory Peritoneal Dialysis in cases of Acute Renal Failure in Dogs. *The Indian Veterinary Journal*. **88(10)**: 32-34.
- Langston, C. (2010) Acute uremia. In *Textbook of Veterinary Internal Medicine*. 7th edn. Eds S. J. Ettinger, E. C. Feldman. Saunders Elsevier. pp 1969-1985.
- Mugford, A., Li, R. and Humm, K. (2013). Acute kidney injury in dogs and cats1. Pathogenesis and diagnosis. *In Practice*. **35** : 253-264.
- Nandy, K. and Pradhan, N. R. (2006). Clinical and haemato-biochemical changes in gentamicin induced renal failure in dogs and its therapeutic management. *Indian J. Vet. Med.* **26(1)**: 16-21.
- Ross, L. A. (2006) Acute Renal Failure. *Standards of Care : Emergency And Critical Care Medicine*, **8(4)**: 1-9.
- Scurtu I., Giurgiu, G., Mircean, M., Livitchi, L. and Niculae, M. (2008). Peritoneal dialysis in dogs and cats. *Buletin USAMV Veterinary Medicine*. **65(2)**: 369.
- Stanley, S. W. and Langston, C. E (2008) Hemodialysis in a dog with acute renal failure from currant toxicity. *Can Vet J*, **49**:63–66.
