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Title of thesis : Electrolyte and Acid Base Imbalances in Common Clinical Disorders in Dogs
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Admission number : V-2020-30-014
Major discipline : Veterinary Medicine
Minor discipline : Veterinary Surgery and Radiology
Date of thesis submission : November 05, 2022
Total pages of the thesis : 145
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ABSTRACT

The present investigation was aimed to study the clinical, diagnostic and therapeutic aspects of Electrolyte and acid base imbalances in common clinical disorders in dogs. The study was conducted on 2276 dogs presented in the Teaching Veterinary Clinical Complex, Palampur. On the basis of history, clinical examination, haemato-biochemical profile, electrolyte profile, acid base imbalances and imaging studies, a total of 328 dogs (14.41% : 328/2276) with electrolyte disorders were found. The overall prevalence from the total dogs presented in the clinics were 5.79% (132/2276) in Renal failure dogs, 3.60% (82/2276) in Canine Parvoviral enteritis dogs, 2.72% (62/2276) in Canine Distemper dogs and 2.28% (52/2276) in dogs with Ascites of hepatic origin. Based upon preliminary screening and final diagnosis, 328 cases of Electrolyte disorders were found. Out of these 328 cases, 132 (40.24%, 132/328) suffered from Renal failure, 82 (25.01%, 82/328) from Parvoviral Enteritis, 62 (18.90%, 62/328) from Canine Distemper and 52 (15.85%, 52/328) from Ascites of hepatic origin. The prevalence of different Electrolyte imbalances in Renal Failure dogs revealed Hyponatremia, Hypokalemia and Hypochloremia in 50.75% (67/132), 36.36% (48/132) and 19.69% (26/132) cases, , respectively whereas Canine Parvoviral Enteritis revealed Hyponatremia, Hypokalemia and Hypochloremia in 65.85% (54/82), 36.58% (30/82) and 24.39% (20/82) cases, respectively. The prevalence of different Electrolyte imbalances in Canine Distemper dogs revealed Hyponatremia, Hypokalemia and Hypochloremia in 77.41% (48/62), 51.61% (32/62) and 29.03% (18/62) cases, , respectively whereas Ascitic dogs revealed Hyponatremia, Hypokalemia and Hypochloremia in 75% (39/52), 30.76% (16/52) and 53.84% (28/52) cases, , respectively. Rest of the dogs were having normal levels of Sodium, Potassium and Chloride. The dogs suffering from Renal failure were anaemic with Hb and PCV as 8.89±0.91 g/dl and 27.26±2.49%, respectively. The mean values of BUN and Creatinine were significantly higher (141.08±14.26 mg% and 6.50±0.49 mg%, respectively) than healthy animals. The mean values of Sodium, Potassium and Chloride were 147.56±1.18 mmol/L, 3.8±0.25 mmol/L and 105.67±1.16 mmol/L, respectively. The mean value of Sodium was significantly lower than healthy animals. Renal failure dogs were having hyperphosphatemia with mean Phosphorus level as 7.341±0.44 mg/dl. Venous blood gas and acid base status in 22 dogs of Chronic renal failure revealed the mean values of pCO₂, HCO₃, tCO₂ and sHCO₃ were significantly decreased as compared to healthy dogs indicative of metabolic acidosis in affected dogs. In Canine parvoviral enteritis there was a significant decrease in Lymphocytes and significant increase in Monocyte values i.e. 18.55±1.46% and 10.99±1.72%, respectively compared with healthy animals. These dogs were suffering from hypoproteinemia with mean Total Protein value as 4.56±0.37g%. The mean values of Glucose increased significantly from 92.01±5.19 mg% after institution of treatment. The mean values of Sodium and Potassium were 141.84±0.95mmol/L and 3.38±0.08mmol/L which increased non-significantly after the treatment. A significant decrease in mean value of Chloride was present i.e. 103.74±0.82mmol/L as compared to healthy dogs which increased non-significantly after the treatment. The dog suffering from Canine Distemper had mean values of TEC and PCV as 5.50 ± 0.35 x 10¹²/L and 29.89 ± 2.46%, respectively which were significantly lower than healthy animals followed by non-significant gradual increase after treatment. The mean values of ALT were 40.14±14.40U/L and 72.39±5.19U/L, , respectively which were significantly higher than healthy animals. Similarly, mean value of Potassium was also significantly lower compared with healthy animals. The dogs suffering from Ascites were having mean values of Hb and TLC as 11.24±0.52g/dL and 12.67±0.49 x 10⁹/L, respectively. The mean values of ALT were 131.92±25.36 U/L and 98.59±6.10 U/L in pretreatment and posttreatment dogs which were significantly higher than healthy animals. The mean values of Sodium and Potassium were 139.81±1.45 mmol/L and 3.50±0.14mmol/L, respectively. The mean values of Sodium increased significantly after the treatment. A significant decrease in Chloride was observed compared to healthy animals which increased non-significantly after the treatment. Specific treatment of different diseases along with specific fluid therapy as per need resulted in significant recovery of diseased animals.

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