

Exocrine Pancreatic Insufficiency in a German Shepherd Dog - Case Report

Rejitha^{1*}, J. and Soumya² S.

¹MVSc Scholar, Dept Veterinary Physiology, Kerala Veterinary and Animal Sciences University, Kerala, India

²MVSc Scholar, Dept Animal Husbandry and Extension, Kerala Veterinary and Animal Sciences University, Kerala, India.

Abstract: *An eight month old German Shepherd male dog was presented with history of loss of weight but having ravenous appetite. The animal suffered with several diarrhea especially meat or meat products offered as feed and showed signs of coprophagy. On clinical examination physiological parameters were normal but body score was poor. The animal suspected to have exocrine pancreatic insufficiency and confirmed by x-ray film test. Pancreatic enzyme was prescribed twice daily for two weeks. The case reviewed after two weeks and found that animal condition was improved and stopped the habit of coprophagy. The same medicine was continued for another two weeks and after that the dose was reduced to once daily. After three months of treatment the dose was further reduced to once in two days.*

Keywords: Pancreatic insufficiency, Loss of weight, Coprophagy

1. Introduction

Exocrine pancreatic insufficiency (EPI) is usually described by the terms maldigestion, malabsorption and malassimilation. The condition may be due to loss of exocrine tissue which may be congenital, including juvenile atrophy or pancreatic hypoplasia or acquired secondary to relapsing pancreatitis (Watson, 2006). EPI is more commonly seen in large breeds of dogs and rare in small breeds. German Shepherd dog breed has a predisposition to EPI (Westermarck et al., 2010), inherited as an autosomal recessive trait (Gough and Thomas, 2004). EPI is a disease can control through medication and dietary management, but unattentive and irresponsible ownership of animal result in unwanted suffering of the animal.

2. Materials and Methods

A German Shepherd male dog of eight month old was presented to Veterinary Hospital, Angamaly, with the history of severe loss of weight but having good appetite and feed intake. The owner also reported that the dog suffering with diarrhea or indigestion, voiding bulky faeces and showing a habit of faeces eating. The regular activity of the animal reported as normal and not had any sign of dehydration. The case history was recorded and animal was examined for clinical signs and recording physiological parameters. Data was generated based on the case history and the recorded parameters followed by clinical examination of the patient.

3. Results and Discussion

The result of animal's physiological parameters, body temperature, pulse rate and respiratory rate were found normal. Mucous membrane was pale. Dull coat and scurfy skin was observed. No parasitic ova found in faeces. Microscopic examination of faeces revealed fat globules. Based on the clinical signs and history the case was tentatively diagnosed as exocrine pancreatic insufficiency.

Sample of stool was greasy. X-ray film digestion test confirmed the condition as EPI.

After confirming the condition, the animal was treated with Digeplex tablets (Pancreatin 500 mg) twice daily for two weeks. Prognosis of the patient was good and it suddenly responds to the treatment. The case was reviewed after two weeks and found that body score was improved. The owner also reported that the behavior of eating stool was stopped. Same medicine was prescribed for two more weeks. After two weeks the dose rate was reduced to once daily. Medication was reduced to once in two days after three months of treatment. The owner was informed that the dog might have lost major exocrine pancreatic tissue and medication has to continue for its life time.

Pancreas has a large functional reserve and good regeneration capacity. Clinical signs of EPI usually occur after 80-90% of exocrine tissue is lost. Weight loss could be up to 40% body weight in case of patient suffering with EPI. Faeces had bulky, cow pat in form and greasy in appearance with undigested food in faeces. Polydipsia and diarrhea could be found as clinical signs (German, 2012). In this case the animal showed all classical signs of EPI. Mechanism associated with development of diarrhea in EPI is the inability of dog to utilize ingested food which remains in intestine and result osmotic diarrhea and also the undigested fat which break down by bacteria in the colon produce fatty acids which result in secretory diarrhea (Morgan and Moore, 2009).

Faecal analysis is playing great value in diagnosing EPI. Sample should be examined for the presence of bacterial pathogens, parasitic ova undigested food particle and trypsin. In the faeces the presence of starch is indicated by dark blue granules and presence of fat is indicated by black granules following staining with Lugol's iodine and Sudan IV respectively. Presence of faecal trypsin is measured by gelatin tube test of X-ray digestion test. The most suitable confirmatory test for EPI is measuring the trypsin like immunoreactivity in blood, which normally ranges 5-35.

Treatment of EPI should include use of replacement enzyme therapy and attention to dietary management. Pancreatic replacement should be added to food as tablets, powders or granules. Supplemented pancreatic enzymes should be enteric-coated products. Protection of enzyme could be provided by giving H2 receptor antagonist, reducing gastric acid production and thereby protecting enzyme supplement in food (Simpson, 1988). Tylosin could be also provided @ 20-40 mg/kg to suppress bacterial growth and restore small intestinal function. The dose rate of enzyme replacer could be reduced to the amount required to maintain the weight of the animal, after the dog attained its normal body weight.



Dr. Soumya Sankar completed her BVSc and MVSc from College of Veterinary and Animal Sciences, Mannuthy. She specialized in Veterinary Extension during 2009-2011. She joined as assistant professor in the year of 2013. She interested in disseminating knowledge to farmers and conducting exhibitions. She has done her thesis in job related stress in veterinarians.

4. Conclusion

EPI results in an irreversible loss of pancreatic acinar tissue of dog. Even though EPI is an inherited disorder timely treatment and appropriate dietary management helped the animal to gain weight quickly, pass normal feces, and live a normal life. Treatment of EPI carried out to correct the diarrhea and bacterial overgrowth, increase the diet intake to obtain maintenance and growth without inducing diarrhea and satisfy the dog appetite by supplying exogenous enzymes, thereby increase the wellbeing of the animal. The owner was advised to restrict the animal from breeding programmes to prevent the spread of defective genetic trait.

5. Future scope

Case reports on EPI are very less from Kerala, so it will be highly informative for the veterinary practitioners.

6. References

- [1] Watson, P.J. 2006. Exocrine pancreatic insufficiency as an end stage of pancreatitis in four dogs. *J. Small Ani. Pract.* 44(7): 306-312
- [2] Westermarck, E., Saari, S.A. and Wiberg, M. E. 2010. Heritability of exocrine pancreatic insufficiency in German Shepherd dogs. *J. Vet Intern Med.* 24(2):450-452.
- [3] Gough, A. and Thomas, A. 2004. *Breed predispositions to disease in Dogs and Cats*. Blackwell Publishing Ltd. Hong kong. 238p.
- [4] German, A.J. 2012. Exocrine pancreatic insufficiency in the dog: breed associations, nutritional considerations, and long-term outcome. *Top. Companion Anim. Med.* 27(3):104-108
- [5] Morgan, J.A. and Moore, L. E. 2009. A quick overview of canine exocrine pancreatic insufficiency. *J. Vet. Med.* 9: 18
- [6] Simpson, J.W. 1988.. Treatment of canine exocrine pancreatic insufficiency. *Vet. Pract.* 20:5

Author Profile



Dr. Rejitha Joseph (corresponding author) received her BVSc and MVSc from College of Veterinary and Animal Sciences, Mannuthy. She completed her MVSc in Veterinary Physiology during 2011-2013. Her topics of interest are Stress Physiology and veterinary clinical medicine. She has done her thesis in stress physiology.