

Management of High Fiber Induced Diarrhoea in Kittens – A Case study

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Abstract

Kitten diarrhoea is one of the common clinical presentations and it is caused by multiple etiopathology. One of the poorly documented etiologies is high fiber-induced diarrhoea in kittens. This study documents the occurrence of diarrhea in eight three-month-old kittens from a single household. These kittens, who received regular deworming and vaccinations, were fed a commercially available diet high in fiber (5%) on a daily basis. Cats were reported to be passing watery and odorless stools for a week in spite of treatment with antibiotics and supportive medications. Clinical examination revealed dehydration, dullness and poor body condition. Faecal samples examination did not reveal any parasitic ova. Based on the history, clinical and laboratory examination the condition was diagnosed as high fiber induced diarrhoea in kittens and was successfully recovered with the shift of diet to low fiber and supplements of probiotics.

Keywords: Kittens, High fiber, Diarrhoea, Diet Change

The most common malady facing small animal physicians in feline practice is diarrhoea in kittens. Development of the clinical signs varies from self-limiting diarrhoea, mild to the severity in nature and can cause fatal dehydration. Diarrhoea in kittens is associated with different etiologies which include bacterial, parasitic and viral origin; feeding of cows milk, feeding at inedible household items, sudden change in the diet plan and environmental stress. Despite the most common and important of condition in kittens, poor information is available on the role of dietary modifications i.e. crude fiber content in diet (Barr, 2006). Hence the present communication puts a record on the role of crude fiber in diet for the management of diarrhoea in kittens. One of the commonly neglected components in the aetiology of the development of diarrhea in cats is the nutritional aspect.

Case History and Clinical Observations

The current investigation focused on eight kittens, approximately three months old, which had been dewormed and vaccinated. These kittens were brought to the clinic due to a reported case of diarrhoea within a single household. All the cats were fed with commercially available dry food with high fiber (5%). Kittens were reported to be passing watery stools for one week in spite of treatment with antibiotics. Clinical examination revealed dehydration, dullness, rough hair coat and poor body condition. Examination of faecal

samples did not detect any parasitic eggs or gram-negative bacteria. Ultrasonography of the abdomen revealed increased peristaltic movements of intestines. Based on the vaccination and regular deworming history, negative for parasitic ova and high fiber content condition was diagnosed as high fiber induced diarrhoea in kittens.

Treatment and Discussion

In the present study, faecal examination was carried out to know about the aetiology by the direct faecal smear, stained smear and faecal flotation technique. This was negative for cysts, oocysts and ova of parasites. The kitten diet was shifted to the diet with low fiber (1.5%) and supplementation of probiotics and oral rehydration therapy was carried out. Improvement in clinical condition was noticed by the third day of treatment and a pattern of clinical recovery and faecal consistency was recorded (Fig. A, B, C). In the present study, kittens were administered with different antibiotics which could not have any improvement. Indiscriminate use of antibiotics often results in the development of antibiotic resistance and which will alter the commensal intestinal microflora finally lead to exacerbation of diarrhoea. As a part of the treatment kittens were treated with probiotics along with the change in diet. Probiotics such as *enterococcus*, *bifidobacteria* and *lactobacillus acidophilus* will influence the gut microflora by inhibiting pathogenic micro-organisms and enhancing immunity. These things are highly recommended in kittens with intact mucosal barriers due to infectious or non-infectious diarrhoea (Marks *et al.*, 2011). Despite of many advantages of

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having a pet, there is a possibility of transmission of zoonotic diseases from diarrhoeic kittens (Nagamori *et al.*, 2018). *Toxocara* species have been identified as the cause of parasitic zoonosis (Sivajothi and Reddy, 2019). *Cryptosporidium* species is also a causative agent for diarrhoea (Loftin *et al.*, 2019). These parasitic infections can cause watery diarrhoea with or without blood, vomitions, anorexia and dehydration. In the present study, laboratory studies were carried out to exclude possible parasitic infections. Gastrointestinal disorders are the most common problems in cats, and the clinical signs associated with these diseases, vomiting, diarrhoea, anorexia, or weight loss, are some of the most and many gastro intestinal diseases are not complete without the concurrent addition of appropriate dietary therapy (Zoran, 2008). In most cats hairball regurgitation can cause complications like intestinal blockage, the inflammation of mucosa and melena (Canon, 2013). Its highly recommended addition of fiber in the diet to increases the passage rate and stimulate gastric contraction to expel the hairballs if any in the duodenum (Dann *et al.*, 2004). But few authors documented that there is no effect of fiber content in the transit time (Armbrust *et al.*, 2003). High fiber has the role in prevention of hairball formation and it is advisable in adult cats. But in the present study, without knowledge

about the high fiber in the diet owners were continuing to give the medications. Probiotics have the role of treating diarrhoea by improving the gut microbiota, enhancement of immunity and by manipulating of intestinal defence barriers (Peters *et al.*, 2019). Nutrition plays an important role in cat stool consistency and poor nutrition leads to chronic diarrhoea. Diarrhoea can be prevented by low-fat food, high protein, low-carbohydrate, soluble fibers, omega-3 fatty acids and antioxidants. Carbohydrates should be low in level and from multiple sources. Meat source proteins are more soluble than plant source. The diet should not contain gluten, lactose or preservatives. Dietary fibers are two types i.e. soluble fibers and insoluble fibers. Soluble fibers tend to cause slow gastric emptying and transit time. Insoluble fibers tend to assess water and increase faecal volume and are useful in normalizing gastrointestinal motility. Excessive soluble fiber can cause loose and watery stools and the production of excessive gas, while excessive insoluble fiber can cause excessive stool volume.

Conclusions

In kittens with diarrhea unresponsive to standard therapy and lacking a definitive diagnosis, a high-fiber diet played a significant role. Transitioning from a high-fiber to a low-fiber diet is expected to aid in resolving chronic diarrhea in kittens.

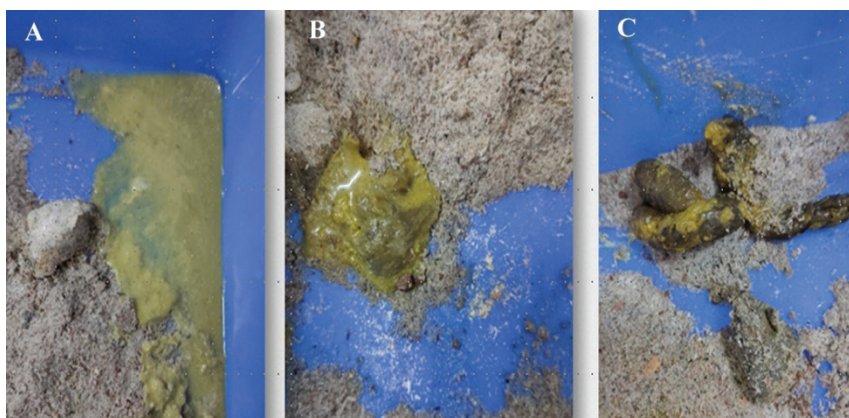


Fig. A, B, C: Improving the faecal consistency during the course of treatment

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