Common Veterinary Drugs That Are Used In Gastrointestinal Disorders In Dogs And Cats

Gastrointestinal disease is extremely common in veterinary medicine. There is a wide range of presentations and a wide variety of symptomatic treatments. There are various gastrointestinal diseases under veterinary medicine that has its different causes either by bacteria or viruses. In this essay, there will be describing all the common veterinary drugs that are used in gastrointestinal disorders in dogs and cats. Description on their modes of action, indications for use and their effects (both good and bad). Most importantly determining from the available evidence if the drug is recommended/effective in the situation that people use it for or if the indication is controversial thus stating the reasons why.

To begin with; Emetic Drugs, certain animal possess a special ability for survival, many are used for food consumption. Consumption of food can lead to exposure of internal organs to possible food related disorders, like viral and bacterial infection. Humorally mediated emesis results from emetogenic substances in the circulation system, which activates the chemoreceptor trigger zone in the area postrema. In pharmalogical point of view focuses on the humoral pathway of emesis, based on the neurotransmitter interactions at the chemoreceptor trigger zone. This emetic drugs are usually administered in emergencies usually after consumption of a toxin, this drugs usually removes 16 weeks old and acute vomiting in dogs > 8 week old at 1 mg/kg/day. This drug is commonly called as cerenia and is available in both oral pills and injectable versions. Maropitant citrate may interact with some medications including nonsteroidal anti-inflammatory drugs (NSAID), cardiac drugs, seizure medications and other behavioural drugs. Consult with your veterinarian for any information required and its specific dosage.

This drug should never be used in animals that is hypersensitive or lethargy to the drug and when giving this drug, cautions are to be taken especially dogs and cats with gastrointestinal obstruction, toxin ingestion or liver diseases. Maropitant citrate injection is to be given to dogs that are 8 weeks older and in cats 16 weeks and older but for oral citrate should be used on dogs that is 8 weeks older but when used on motion sickness on dogs it should be 4 months and older. Oral Maropitant citrate can be used in cats over 16 weeks and older for vomiting. Some side effect of Maropitant citrate is that it may cause hyper salivation, drowsiness, lethargy, anorexia and diarrhoea. Giving an injection with this drug can cause a stinging sensation and this causes a few dogs to vomit after treatment.

Moreover; this are some Drugs used in the treatment of diarrhoea (Monogastric) - Mucosal Protectants and Absorbents, these are following drugs:

Kaolin-pectin, this drug is popular for symptomatic therapy of diarrhoea. It is a form aluminium silicate and pectin carbohydrate extracted from the rind of citrus fruits. The manufacturers claim that kaolin-pectin acts as demulcent and absorbent in the treatment of diarrhoea. Kaolin and pectin provides a coating action that protects the stomach lining. This drug is useful kaolin and pectin is used mostly as an oral anti-diarrheal agent. In clinical studies have not demonstrated any benefit in the administration of kaolin-pectin. Its effects are that it may cause changes in the consistency of the faeces but does not affect the electrolytes loss or shortens the duration of

illness. It is also given to small animals, foals, calves, lambs and kids since it is administered PO.

This drug should not be given to any animal that is hypersensitive or allergic to this drug. Owners should know that some side effects may include mild constipation especially when given in high doses. For dosage and administration for dogs and cats: 1-3 tablespoons is required since this drug is usually given in liquid form.

Activated Charcoal, this is derived from wood, peat, coconut or pecan shells. This material is heated and treated to have many large pores is formed thus increasing the internal surface area. Activated charcoal is very effective in absorbing bacterial enterotoxins and endotoxins and thus causing diarrhoea. Activated charcoal absorbs many drugs and toxins and prevents GI absorption. This need to be taken after ingestion of the toxin and this is usually administered via a stomach tube. To increase absorption of the toxicant, activated charcoal should be administered as soon as possible after exposure because if it is delayed, its effectiveness may decrease.

Warnings to be taken is that never give a patient who is not fully conscious, do not use in case of ingestion of caustic substance and always take caution in order to avoid aspiration of the charcoal. For cats and dogs, activated charcoals are given orally to prevent the absorption of various toxins from the stomach and intestine.

“Single dose activated charcoal should not be administered routinely in the management of poisoned patients….[as]….there is no evidence that administration of activated charcoal improves clinical outcome”, as stated in the position paper in 1997 created by the American Academy of Clinical Toxicology (AACT) and the European association of Poisons Centres and Clinical Toxicologists (EAPCCT). In human medicine administration of activated charcoal has declined from 7.7% in 1995 to 5.9% in 2003 on its effectiveness but this is still being used in the veterinary medicine.

Therefore; Gastrointestinal Prokinetic Drugs (Monogastric), this type of drugs increases the movement of ingested material through the GI tract. They help in the treatment of motility disorders as they induce coordinated motility patterns.

Metoclopramide, this is a central dopaminergic antagonist and peripheral 5-ht3 receptor antagonist and 5-ht4 receptor agonist with GI and effects of the CNS. This drug helps in the stimulation and coordination of oesophageal, gastric, pyloric, and duodenal motor activity. This should also be effective in diseases where normal motility is diminished. Metoclopramide helps in the emptying of liquids compared to solids. It is also effective in treating postoperative ileus in dogs where it can be clearly seen by decreased GI myoelectric activity and motility but it has no effect on colonic motility.

Metoclopramide is usually given 3-4 times a day in a tablet form especially in cats and dogs but if there is a possible side effect, it may cause allergic reaction (difficulty breathing, swelling of the lips, tongue, and face) and others may also include nausea or diarrhoea, dizziness, increased retention and increased urination.

Macrolide antibiotics (Erythromycin), these are motilin receptor agonists. Erythromycin increases the gastric emptying rate in healthy dogs but if large chunks of food enter the small

intestine, it may not be able to be digested. Erythromycin can also induce contractions of the stomach to the terminal ileum and proximal colon but erythromycin is unlikely to benefit patients with colonic disorders.

This antibiotic is used in both cats and dogs to treat infections of bacteria like skin, bone, or sinus infections. Erythromycin at low doses can be used to stimulate intestine motility. Some side effects caused by this drug are that it may cause vomiting and can cause nausea, diarrhoea and decreased appetite in cats and dogs. Always remember that this drug should never be administered to pregnant animals.

This drug is given out in a form of tablets and capsules in sizes ranging from 250 mg to 500 mg and in oral liquids suspense ranging in concentration from 25mg/ml to 50mg/ml. In both cats and dogs, the usual dose is 5- 10 mg per pound (10-20 mg/kg) every eight to 12 hours orally and to stimulate motility of the intestine (Prokinetic agent) the dose used is 0.25 to 0.5 mg per pound (0.5 to 1 mg/kg) orally every 8 hours.

In contrast; Cathartic and Laxative drugs, this type of drugs increase the motility of the intestine and increases the quantity of faeces. To increase passage of gut contents associated with intestinal impaction these drugs is administered especially during radiography and endoscopy in order to cleanse the bowel and to eliminate toxins from the intestines.

Lactulose Solution, It is used in cats and dogs as laxatives but must be prescribed by veterinarians only and it is beneficial because it is easy to administer in liquid form and NO restrictions. Lactulose is a disaccharide sugar composed of galactose and fructose but it is not absorbed in the blood, it passes unchanged to the large intestine. In the large intestine, bacteria, resulting in the production of acids, break down lactulose. These acids draw water into the colon, softening the stool and increasing the volume, resulting in a laxative effect.

Symptoms like flatulence, bloated stomach and cramping can be some side effects but when there is an overdose, there will be dehydration and diarrhoea. This is prescribed to animals but it is commonly accepted practice for veterinarians to use it on dogs and cats. Laxative for dogs and cats is 1ml per pounds of body weight but given 8 hours.

Bisacodyl (Dulcolax), this is laxative drug used to treat dogs and cats for laxatives. This drug belongs to a class of stimulant laxatives. Food and drug administration stated that this drug should not be given to animals unless legally prescribed by veterinarians as an extra-labelled drug.

Generally, bisacodyl is used to stimulate bowel movements in animals that have constipation or when there is a need to empty the large intestine to prep for surgery or endoscopy etc. There are various side effects and precautions that are required to follow, like; this drug is not to be given to any animal with known hypersensitivity or allergy. This drug must not be given to animals with gastrointestinal obstructions, rectal bleeding or gastric ulcers. After this drug has been administered, it can cause diarrhoea, cramping’s and nausea.

Bisacodyl is given in 5mg tablets, 5mg and 10 mg rectal suppositories and some in 10mg/30 ml enema bottles. For doses given to dogs it may vary between 1-4 tables once daily and 1-2ml of an enema solution or given 1-3 paediatric suppositories given rectally whereas for cats there is a dose of 5mg tablet once daily or enema solution of 1-2 ml.

Finally; Anthelmintic Drugs, This drug helps in the removal of parasitic worms that may have infested the digestive tract. These drugs have a broader spectrum of activities against mature and immature parasites, easy administration, and wide margin of safety and inhibit reinfection for extended periods. Some important drugs used for cats and dogs are as follows:

Mebendazole, This broad-spectrum antiparasitic active ingredient is used in both livestock and mammals against internal parasites like roundworms and tapeworms. This drugs targets parasitic worms such as nematode and taenia species. This drug is given to animals in a form of drenches and tablets. This drug is orally administered 20mg/kg of mebendazole for 3 consecutive days where in dogs up to 5kg of weight with 1 tablet daily, for 3 to 5 consecutive days and cats will be administering 1 tablet daily, for 3to 5 consecutive days. Certain side effects would include bloody diarrhoea, vomiting jaundice, loss of appetite and depression but if there is an overdose, this can cause liver toxicity.

Febendazole, this drug can only be prescribed by veterinarians to treat internal parasites such as roundworms, whipworms, hookworms and tapeworms in order to be used on dogs and cats. Febendazole interrupts the cellular transport and metabolism of parasites; they help in dimishing energy reserves and limit their ability to eliminate waste.

Febendazole may result in some side effects like diarrhoea, loss of appetite and lethargy and this may react negatively towards praziquantel and dexamethasone. Always be cautious in administering this drug especially with liver diseased animals and never give this drug to any pregnant animals. This drug is given in a form of granules, suspensions and pastes where in cats and dogs, 25mg per pound (50mg/kg) daily for 3 consecutive days.

In Conclusion, gastrointestinal disease is extremely common in veterinary medicine. There is a wide range of presentations and a wide variety of symptomatic treatments and are there various ways and techniques to carry out this drugs with its exact dosages and administration considering certain factors like the animals weight , type of species it is from, hypersensitivity and it allergies. The drugs that are being mentioned above are only focused on dogs and cats and its specific prescription and requirements.

Reference

1. Drug used to treat digestive disorders https://www.merckvetmanual.com/special-pet-topics/drugs-and-vaccines/drugs-used-to-treat-digestive-disorders
2. Drugs to Control or Stimulate Vomiting (Monogastric) https://www.msdvetmanual.com/pharmacology/systemic-pharmacotherapeutics-of-the-digestive-system/drugs-to-control-or-stimulate-vomiting-monogastric ....7 effective emetics and how to use them … http://veterinaryteam.dvm360.com/7-effective-emetics-and-how-use-them Pharmacologic control of vomiting (Proceedings) http://veterinarycalendar.dvm360.com/pharmacologic-control-vomiting-proceedings
3. Drugs Affecting Appetite (Monogastric) https://www.msdvetmanual.com/pharmacology/systemic-pharmacotherapeutics-of-the-digestive-system/drugs-affecting-appetite-monogastric
4. Gastrointestinal Prokinetic Drugs (Monogastric) https://www.msdvetmanual.com/pharmacology/systemic-pharmacotherapeutics-of-the-digestive-system/gastrointestinal-prokinetic-drugs-monogastric

5. Drugs Used in Treatment of Diarrhea (Monogastric) https://www.msdvetmanual.com/pharmacology/systemic-pharmacotherapeutics-of-the-digestive-system/drugs-used-in-treatment-of-diarrhea-monogastric
6. Cathartic and Laxative Drugs (Monogastric) https://www.msdvetmanual.com/pharmacology/systemic-pharmacotherapeutics-of-the-digestive-system/cathartic-and-laxative-drugs-monogastric
7. Overview of Anthelmintic https://www.merckvetmanual.com/pharmacology/anthelmintics/overview-of-anthelmintics