CANIPLAS® INDICATIONS

Below is an article written by Plasvacc's Chief Scientific Officer on the use of Caniplas® in clinical situations to assist veterinarians in treating a wide variety of conditions commonly seen in veterinary practices.

1. PARVOVIRUS INFECTION (CPV)

Caniplas® has high Immunofluorescence Antibody Test titres to Canine Parvovirus (CPV), up 4 dilutions higher than the maximum level a recently vaccinated dog would show. One treatment (10mL/Kg of body weight) EARLY has up to date yielded very rewarding results with this very messy disease. Veterinarians report to me that the diarrhoea dries up almost immediately. This is because we hyperimmunise with a C5 vaccine as well as our own killed E coli J5 LPS vaccine. Therefore there are also high levels of antibody protection to Canine Distemper Virus, Canine Adenovirus (Hepatitis Virus) and the Kennel Cough vaccine antigens. Antibodies present to canine Herpes Virus are also present (naturally acquired) and similar efficacy could be expected using Caniplas® on these conditions - Herpes Virus is known to be a common cause of Fading Puppy Syndrome (FPS). Similarly, given the results obtained when using Caniplas® to treat Parvovirus Infection, Caniplas® is also beneficial in the treatment of all Diarrhoeas, even Hemorrhagic Gastroenteritis cases.

2. ACUTE PANCREATITIS

Caniplas® benefits these cases in a number of ways:

A. **Anti-Protease Activity** - All plasma has this action naturally, which directly combats the proteolytic effects of the pancreatic enzymes as they reach the blood stream and the gut lumen in abnormal quantities.

B. **Anti-Endotoxin Activity** - Hyperimmunization of our donor dogs with a killed *E coli* J5 LPS Vaccine combats the endotoxaemia which invariably accompanies Acute Pancreatitis and causes Disseminated Intravascular Coagulation. Disseminated Intravascular Coagulation is frequently the terminal event in Acute Pancreatitis. The Pancreatic enzymes cause damage to the gut wall which allows translocation of gut bacteria and endotoxins.

C. **Disseminated Intravascular Coagulation** - The clotting factors assist the anti-endotoxin activity of Caniplas® to combat Disseminated Intravascular Coagulation. Disseminated Intravascular Coagulation is known to be mediated primarily by Endotoxins.

D. **Boosts plasma protein levels.**

E. **DOSE** - Use it once, use it early in the course of this disease, at the standard dose rate - 10mL/Kg of body weight.

3. DISSEMINATED INTRAVASCULAR COAGULATION

(See previous) DOSE - Use it once, use it early. Usual dose rate applies.

4. OTHER COAGULOPATHIES

Caniplas® (once again at the standard dose) clotting factors are also useful in treating other Coagulopathies such as:

i. **Rodenticide Poisoning** - used before the Packed Cell Volume (PCV) falls so low that a blood transfusion is indicated (10-15%). One dose will lift the PCV by 5% in 12 hours and the dog will continue to improve from there, provided Vitamin K therapy is started and provided the dose rate of rodenticide is not impossibly high. It is preferable to use Caniplas® early in these cases because of the lag time for Vitamin K to start working. It is suggested when using Caniplas® on these cases, and it is usually standard practice, recheck the PCV and give a blood transfusion if it is still falling.

ii. **Envenomations** - in snake bite or spider bite where there is an accompanying coagulopathy, patients will benefit from Caniplas® treatment. This is symptomatic treatment only and the primary cause must always be treated (antivenoms), but often supportive therapy with Caniplas® will be rewarding to the clinician.

iii. **Von Willebrands Disease** - Veterinarians often transfuse a bag of Caniplas® as a routine while spaying a Doberman, especially if its vWD status is unknown or doubtful.

iv. **Haemophilia** - see vWD.

v. **DOSE** - Use it once, use it early. Dose rate is 10mL/Kg of body weight.

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vi. **Endotoxaemia** - There are myriad disease states in the dog which are accompanied by elevated levels of Endotoxins in the blood stream. This means that the best response to treatment of these cases will result from attention to reducing the level of Endotoxins as well as the primary treatment. Some of the more common conditions that fall into this category are:

a. **Pyometron** - This condition, plus the profound endotoxaemia that accompanies it, is one of the classical indications for the use of Caniplas®.

b. **Intestinal Catastrophes** - These are potent Endotoxin-releasing incidents and will ALWAYS be beneficial to accompany the appropriate surgery, such as in cases of, Gastric Dilatation Volvulus, Obstruction, Torsion/Volvulus, Necrosis, Rupture. Caniplas® treatment should be used as support therapy in cases where any gastro-intestinal surgery is involved.

c. **Acute Prostatitic Infections.**

d. **Heat Stroke (hyperthermia)** - see below.

e. **DOSE** - Use it once, use it early. However, with Endotoxaemia the dose required depends direcly on the severity of the endotoxic insult - the greater the level, the more Caniplas® will be required. Therefore in this situation Caniplas® therapy must be titrated to effect. If the clinical signs return, more plasma must be given as a top-up.

vii. **Fading Puppy Syndrome** - see previously. Caniplas® can be used on puppies by the subcutaneous or intraperitoneal or oral (<24 hours old) or intravenous (if big enough to catheterize) routes. DOSE - A dose rate of 50% higher applies to the non-intravenous routes - 15mL/Kg body weight.

viii. **Post-caesarian Puppies** - Plasma is an excellent adsorption agent for the free radicals that are invariably present in puppies after a dystocia and subsequent stressful delivery. DOSE - as for FPS.

ix. **Motor Vehicle Accidents** - With potentially many occult bleeding points, a Caniplas® transfusion is useful supportive therapy at the standard dose.

x. **Immune Mediated Haemolytic Anemia (IMHA)** - Veterinarians are increasingly turning to Caniplas® to treat IMHA and other auto-immune diseases. The anti-endotoxin activity of the product direcly combats the Systemic Inflammatory Response (SIR) (or the Inflammatory Cascade caused by the "auto immune" nature of this disease) which is initiated early in the course of IMHA and exacerbates it. Dose - once again to effect..

xi. **Haemorrhagic Shock** - Once again the SIR is thought to intervene in these cases also. If Caniplas® is administered and the SIR stopped and the cause of bleeding treated, a blood transfusion may be avoided. In fact, all cases where a blood transfusion may potentially be indicated may benefit from a Caniplas® transfusion to the point where the blood transfusion may prove not to be necessary. The key is to use Caniplas® early. DOSE - to effect.

xii. **Major Surgery** - Caniplas® used preventatively in cases of amputations and other major surgery cases such as thoracotomies, may also avoid having to give a blood transfusion later on.

xiii. **Heat Stroke** - It is well known in the scientific literature that elevation of the body temperature causes gut stasis, which in turn causes translocation of bacteria across the gut wall (or endotoxaemia), which in turn causes elevation of temperature - a self-feeding cycle of spiraling body temperature, sepsis, cell death, multiple organ failure and death. Early and prompt-intervention with Caniplas® may be helpful in these cases also, along with the other standard treatments of cooling the body, I/V fluids, anitibiotics, non steroidal anti-inflammatory drugs etc. DOSE - Use aggressively as the stakes are high (2-3X standard dose).