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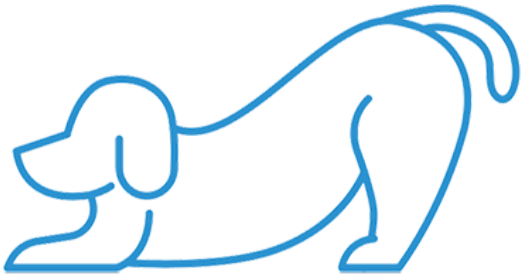

Acute Pancreatitis

DRIP 5: ADVANCED IMAGING

July 22, 2021

Instructor: Dr. Christopher G. Byers, DVM, DACVECC, DACVIM, CVJ

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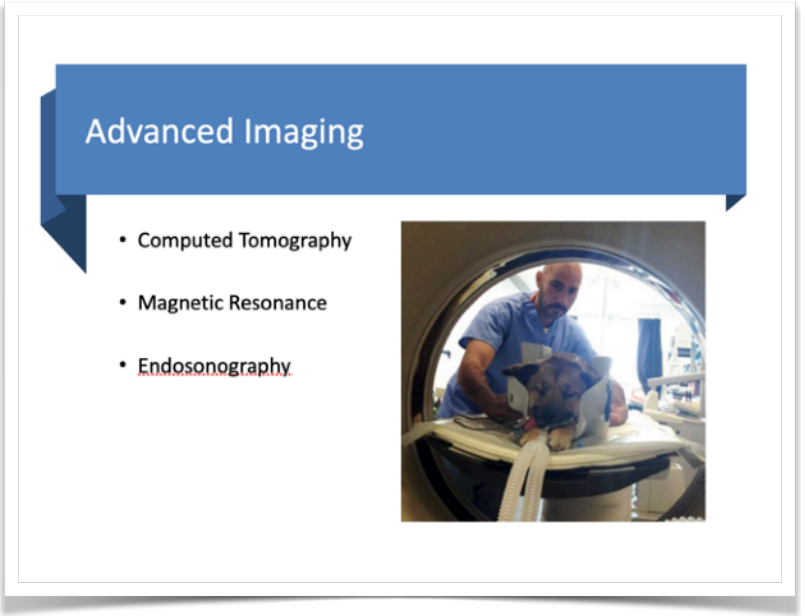
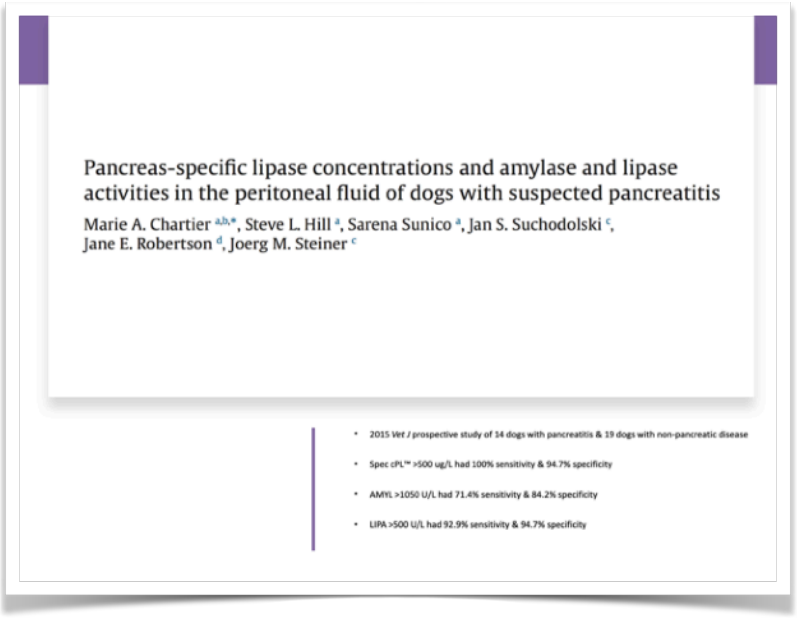


And then, of course, we have advanced imaging. That's all been studied. It's just not done very often. It's cool. But computed tomography and MRI take sedation. Last thing I really want to do is anesthetize or sedate a pancreatitis patient and potentially further compromise their pancreatic vasculature. Doesn't mean it can't be done. But I just really haven't found a need to do it that often.

Endosonography, really cool, but not really practical. This is coming out of academia. I think the big endosonography study that was done came out of Louisiana State with Dr. Lorrie Gaschen, fantastic study, where they used a special endoscope with an ultrasound probe at the end of it. I mean, really cool, right? But how many of you have an endoscope with an ultrasound probe at the end of it that you can intubate the proximal duodenum? And then it's a side on view ultrasound probe to look transmirrorly through the duodenum wall at the right pancreas, or transmirrorly through the gastric fundus at the left limb of the pancreas. Really cool, kind of makes me geek out as an internist, but not really practical. But I figured I'd share it with you.



In a previous study-- previous lecture, excuse me, on acute abdomens, we talked about measuring pancreas-specific lipase, amylase and general lipase, and doing paired samples or just looking at these specific values and the fluid themselves.

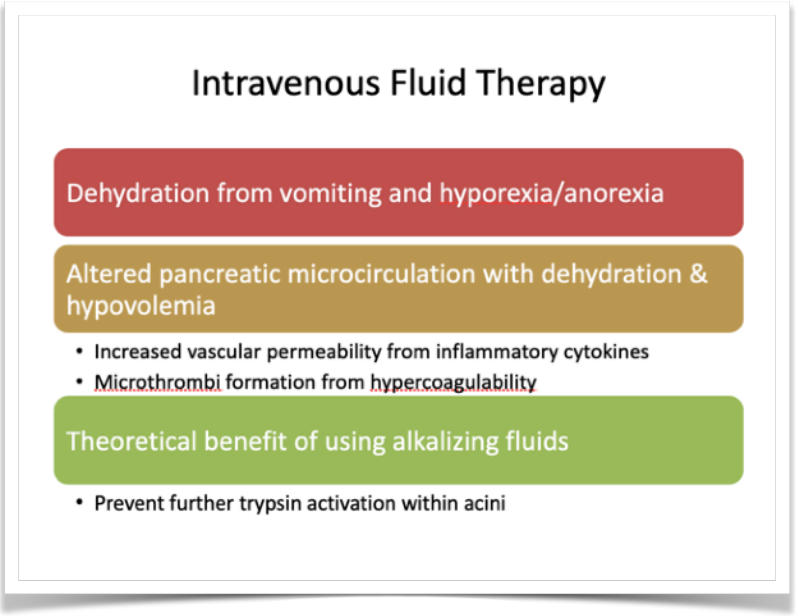
And we have 14 dogs that were included in this study that had pancreatitis, 19 that didn't. And we established reasonably good sensitivity and specificity values. So you can submit peritoneal fluid to do a Spec cPL. And if it's greater than 500 micrograms per litre, it's really sensitive and specific, but you probably want a bedside test, right?

Spec cPL has to go off to the lab. So you could, on one of your drycams or whatever chemistry analyzer you have, measure a lipase, measure an amylase. This is the only place that you will hear me talk about measuring lipase and amylase. And that's not on blood. It's on pleural fluid or peritoneal fluid, this study was specifically peritoneal fluid.

And again, I like lipase because of those reported sensitivities and specificities. You get a lipase on peritoneal fluid in a dog greater than 500, you'll probably have pancreatitis, So if you don't carry SNAPS and any of that but you can run a lipase on a drycam, get some fluid and run it. You might get your answer there. That is supportive of pancreatitis, OK?

So that's enough about diagnostics. We've covered the relevant pathophysiology. Now let's talk about how we treat these kiddos to get them home.

Let's talk about treating these kiddos. Because, again, it's all about maximizing the likelihood of them getting home to their families to lead high quality lives.

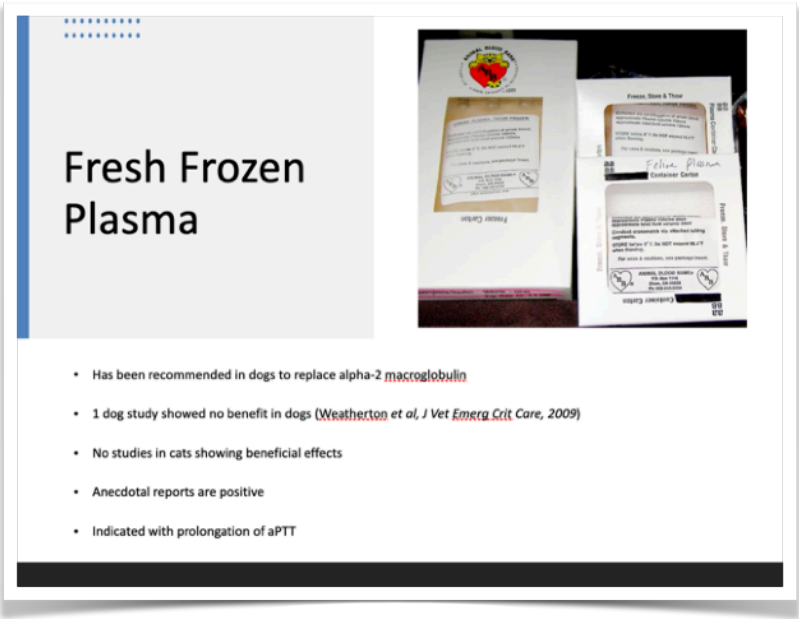


And certainly, a hallmark of therapy is appropriate intravenous fluid therapy. These guys are often dehydrated because they've been vomiting or they haven't been eating and drinking adequately.

That dehydration, that hupovolemia angers and compromises the pancreatic micro-circulation. And when we look at fluids, a lot of these guys have these pancreatic enzymes, these digestive enzymes, triggered by an acidic environment. And so, when we're thinking about the fluids that we want to use, there is a theoretical benefit to using a more alkaline fluid rather than an acidic one.

So what do I use? Do I use normal saline? No, I don't. Why? It has a pH of 5.5. That's the most acidic fluid we have. I like fluids like Filite from Deckra. I like Norm R because their pH is 7.4. It's physiologic, much better in terms of trying to prevent or exacerbate the formation of a hyperchlorimic metabolic acidosis.

And it may have the theoretical benefit of helping to slow down premature activation of some of these digestive enzymes.



I like to use fresh frozen plasma a lot, whenever owners can afford it and not just when they have abnormal coagulation profiles. We know that dogs have reduced alpha-2 macroglobulins when they have pancreatitis.

And the lower your alpha-2 macroglobulin, the higher your mortality rate, OK? Hasn't been any study in cats. And there was one less than ideal study in dogs that did not show a benefit to fresh frozen plasma supplementation to these patients. But there are so many anecdotal reports across the globe about using this that I really hope somebody is going to revisit a study, like Dr. Wetherington's study, to see if there truly is a benefit.

When do I use fresh frozen plasma? Particularly when there is a prolonged activated partial thromboplastin time. There was a study in 2010, 2011 by Snow at, I think it was Michigan State, that looked at trends in plasma use in cats between the mid 90s to the late 90s. It was like 96 to 98 or 99. And then, again, at a different time period in the late aughts, like 2006 to 2009-- a similar time period just a decade later.

In the late 90s, in these cats, FFP, fresh frozen plasma, was administered to two cats. Two, that's it. In the subsequent decade, it was administered to 23 cats. And significantly fewer received Fresh Frozen Plasma for pancreatitis as time passed. So 2% of those 23% received it.

I just find it interesting. My experience is so positive with Fresh Frozen Plasma that I really believe in it. But I have to take a step back and be objective and say, I don't have the data in cats yet and the one study in dogs really showed no benefit. So I can't sit here and advocate for its use in every patient. But I wanted to share my experience that I really do think it helps.

And so, if you have a patient that is circling the proverbial drain, I would not hesitate to give them Fresh Frozen Plasma if you have a family that's in it to win it.