



Treatment Cocktails for Pediatric Kittens

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Hello and Welcome!

- Thank you to the Neonatal Kitten Coalition!
- Most veterinary professionals aren't taught about neonatal and pediatric care in school.
 - These little ones are our most critical and delicate patients
 - We may not know how to effectively treat them
 - Now we have amazing resources for cat-vocates and animal welfare professionals
 - We can give these tiny tigers a fighting chance at life



Where do we start?

- We can begin by reviewing some basics about neonates and pediatric kittens
 - Immune system
 - Thermoregulation
 - Glucose regulation
 - Hydration status

Immune Systems

- May have compromised or weakened immune systems
 - Lack of adequate maternal antibodies
 - Mom may have been immunocompromised
- May have underlying medical conditions making them more prone to illness
 - Congenital defects
 - Viral infections leading to compromised immune systems

Thermoregulation

- Cannot effectively regulate body temperature making hypothermia a real threat
 - We must keep them warm and dry
- Neonates will quickly become hypothermic
 - Bodies shut down when not properly warmed
 - Kittens should never feel cool to the touch
 - Environment should be no more than 10 degrees cooler than their optimal body temperature
 - Strongly recommend space heater with temperature setting

Glucose Regulation

- Easily become hypoglycemic due immature liver function and lack of proper glycogen storage
- Kittens can develop life-threatening hypoglycemia simply from not eating normally for 12 hours
- Ask all caregivers to keep honey, maple or karo syrup on hand
 - Excellent immediate source of glucose for urgent treatment of hypoglycemia
- Recommend Nutrical for frequent caregivers and fosters
- Lethargy, weakness and anorexia are common symptoms
 - Late stage may be non-responsive or even neurologic

Hydration

- Dehydrate easily due to immature kidney function and lack of good compensation mechanisms for dehydration
- How do we determine hydration status?
 - Cannot use skin turgor to evaluate
 - Check mm color and CRT
 - Mucous membranes should be pink and CRT under 2 seconds
 - Pale or white mm with CRT over 2 seconds is an indication of dehydration
 - This may also be an indication of anemia from parasites or underlying medical condition
 - Urine should be pale yellow
 - Dark urine indicates severe dehydration

Now what?

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- We know our kitten basics and feel confident in evaluating a kitten during a sick exam
 - Is the little fuzz ball warm?
 - Is she Bright, Alert and Responsive?
 - How about those gums?
 - Are they pink with a good CRT?
 - Once we have these answers, we can determine what stabilization efforts are the most important.



Examination Time

- Do a quick but thorough exam of kitten's stability, interaction and overall health markers
 - Body temperature and overall warmth
 - Weight
 - Interaction
 - Alert and Responsive? Lethargic?
 - Hydration status
 - Sick symptoms

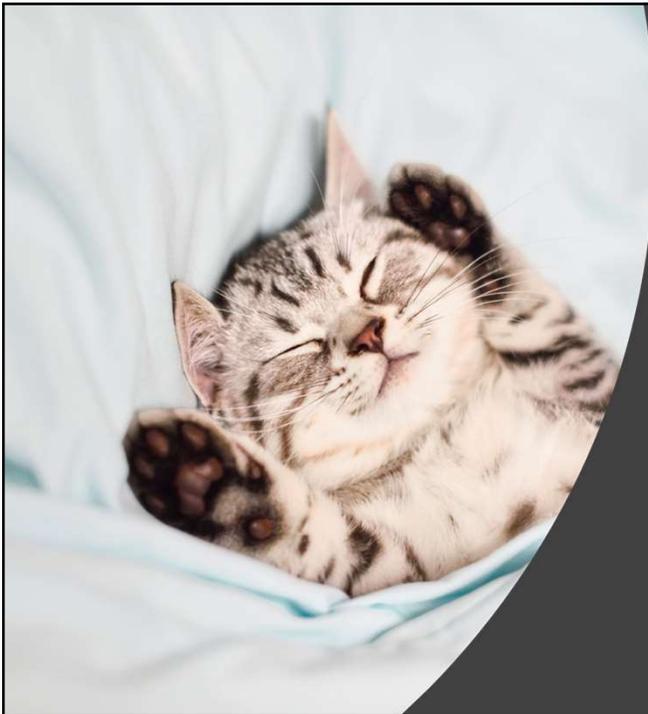
Temperature: Is your kitten warm?

- If you are unsure if the kitten is chilled, you can take a rectal temperature or simply start warming measures
- Warming options
 - Snuggle safes are great but they take time to warm up
 - Bean filled fluid bags are amazing!
 - Fast – can warm in just 60 seconds in microwave
 - Soft and pliable so kittens enjoy sitting on them
 - Always wrap in hand towel, fleece or pillowcase
 - Don't ever put kitten directly on bag
 - Use them as an immediate warmer



Weigh In

- Caregiver should be weighing kitten daily
 - Using google sheets is a great way to track weight
- Kittens should be consistently gaining weight daily
 - Goal is ~ 0.5oz per day
- Without a weight log, determine kitten's age and compare to what a healthy kitten of that age should weigh
 - 4 week old kitten weighing in at 9.8oz is very concerning
 - 3 week old kitten weighing in at 10oz is much less concerning but still not great
- Use weight for calculating treatments



Time to start crafting
our treatment cocktail

Why are they treatment cocktails?

- Use multiple treatments to rapidly resolve and treat underlying issues and sick symptoms
- Most common issues cause signs outside of that system
 - Hypoglycemia can cause anorexia
 - Diarrhea can cause anorexia and even vomiting from GI pain/spasms
 - Diarrhea and anorexia can both cause serious dehydration and hypoglycemia
 - URI can cause anorexia, nausea, hypoglycemia and dehydration!
- Any illness can cause signs and symptoms of other illnesses
- Treatment cocktail provides multiple points of care for kittens
- The most important aspect of treatment plan is to treat the patient and not just the disease

Where do we start?

- Begin by warming kittens in a carrier with fleece and warm bean bag
- If you suspect hypoglycemia, immediately give Nutrical (or Pet Tonic) to get their glucose up
 - If neither of these are available, can use honey, maple syrup or karo syrup
 - Do not use any syrups with artificial sweeteners
- While kittens are warming, start getting your other cocktail ingredients together

Treatment Cocktail Ingredients

- Subcutaneous fluids are the base of all our treatment cocktails
- Almost all ill kittens will either need or benefit from subcutaneous fluids
- We must warm these fluids or risk causing a worsening hypothermia
 - Lactated Ringers Solution is the ideal choice
 - 12ml or 20ml syringe of LRS
 - Keep needle on and put in tall cup of warm water
 - 12ml syringes for kittens up to 12oz
 - Over 12oz, use 20ml syringes



Subcutaneous Fluids

- Dosages:
 - Mild dehydration dosed at 10ml per pound once daily
 - Moderate dehydration dosed at 15ml per pound once daily
 - Significant dehydration dosed at 10-15mls per pound twice daily
 - Fluids can be repeated once to twice daily depending on need of the kitten and severity of fluid loss
- Administration
 - Once warm (5 minutes in warm water bath) use butterfly catheter with 25g needle to administer fluids
 - Check temperature of fluids before administering
- Remember that diarrhea causes chronic fluid loss
 - SQ fluids should be given daily until diarrhea is improving

Treatment Cocktail Ingredients

- Cerenia injection is a primary ingredient in our cocktails!
 - Nausea is frequent result of anorexia, diarrhea, hypoglycemia, dehydration and a very common problem with URIs
 - Virtually every illness we see with neonates and pediatrics has some level of nausea involved
 - Cerenia can help battle the nausea and has anti-inflammatory effects
 - Cerenia will frequently stimulate appetite



Cerenia

- It is extra-label to use Cerenia in neonatal and pediatric kittens
 - Approved for puppies 2 months and older
 - Only approved for kittens 4 months and older
- While this medication is extra-label, it has the potential to be a literal life-saver
- One injection could mean the difference between life and death for a nauseated, anorexic kitten



Cerenia

- How should we give it?
- I always give Cerenia into the fluid bubble
 - This is less painful and less stressful for the kitten
 - May make absorption slower but still effective
- Typically see effects within 2-3 hours when given in fluid bubbles



Treatment Cocktail Ingredients

- Vitamin B is also a great ingredient option!
 - Many sick kittens have depleted vitamin b12 levels
 - B12 plays an essential role in immune system and digestive health
- For these reasons, we frequently administer B12 to sick or unthrifty kittens
 - Typically dosed once per week
 - 0.1ml kittens under 1 pound
 - 0.15ml kittens 1-2 pounds
 - 0.2ml kittens 2-3 pounds



Treatment Cocktail Ingredients

What about antibiotics?

- We only want to use antibiotics if we are concerned about systemic illness or severe immune compromise
- Should not blindly give antibiotics without a just cause

Antibiotics

- In some situations, we need to get a broad-spectrum antibiotic into their system quickly
- What subcutaneous options do we have?
 - Polyflex - short duration of action but provides some broad-spectrum coverage
 - Convenia – long acting but primarily used for skin issues
 - Fecal or urine scald
 - Baytril injection for very severe infections
 - Use cautiously

Antibiotics

- Once kitten is eating, switch to oral antibiotics appropriate for illness
 - Metronidazole for GI
 - Azithromycin, Clavamox or Doxycycline for URI
 - Veraflox for pneumonia

Time to talk about
specific illnesses and
what cocktails we can
use to treat them

Treatment Cocktail Ingredients: GI

Medications to help with GI symptoms

- Diarrhea
 - Always check a fecal on kittens with diarrhea
 - Intestinal parasites and coccidia are very common
 - Coccidia may be missed on a traditional float
 - If coccidia is a concern, consider treatment with Ponazuril
 - Treat any parasite appropriately
- Diarrhea causes dehydration so fluids are a mainstay for these kittens

Treatment Cocktail Ingredients: Diarrhea

We still need to provide some GI support for these kittens

- Fortiflora – probiotics flavor enhancer so may help with appetite
- Profivex – provides both pre and probiotic
- Provable – no flavor so can be easily mixed in food, gruel, formula
- Propectalin to help combat the diarrhea
 - Propectalin paste is an option but does not taste good
 - Propectalin tablets crushed into a powder
- Can make a mixture of crushed Propectalin mixed with Profivex and Fortiflora
 - This mixture can be mixed in food for kittens eating well
 - It can also be mixed with water to make a slurry that can be syringed to a kittens

Treatment Cocktail Ingredients: Diarrhea

- Cerenia is an important treatment for these kittens
 - Helps with nausea associated with GI pain/spasms
- Using Cerenia will get these kittens eating quicker
 - We are removing the nausea and secondary food aversion from nausea
 - Has some anti-inflammatory effects so may help with diarrhea
- What other ingredients might be needed?
 - May need metronidazole to help normalize gut flora
 - Vitamin B12

Treatment Cocktail Ingredients: Vomiting

- Can lead to life-threatening dehydration and hypoglycemia
- Immediately start warming and give subcutaneous fluids
- Cerenia injection to combat nausea and vomiting
- Can give small amount of Nutrical but no syringe feeding or oral medications/treatments until nausea is under control
 - Giving oral treatments to a vomiting kitten can lead to more vomiting
 - Do not syringe feed until nausea is controlled
 - Feeding a vomiting kitten can lead to food aversion
- Vitamin B12

Treatment Cocktail Ingredients: Vomiting

- Once nausea is controlled, we need to feed them
 - First offer highly palatable options
 - One with fortiflora sprinkles and one without
 - If kitten does not readily eat, may need to syringe feed
- Cerenia needs to reach full effect to treat nausea before attempting syringe feeding
 - Never syringe feed a vomiting kitten that has not had nausea treated
 - This can and will lead to food aversion and make kitten even less likely to eat

Treatment Cocktail Ingredients: Vomiting

- Syringe feeding:
 - Use highly palatable pate with water added and slightly warmed
 - Check temperature before syringe feeding
 - Weruva pate (hydrating puree) is a favorite!
 - Royal Canin Baby Cat mousse watered down
 - Can use a/d, recovery or CN but these foods are not appropriate for kittens to eat more than very short term
 - Formulated for both cats and dogs as critical care.
 - Do not meet kitten's protein or fat requirements

Treatment Cocktail Ingredients: ADR

- What does this mean?
 - Lack of weight gain or any weight loss
 - Poor appetite
 - Less interactive mild lethargy
- Treat the patient and not for any specific disease
 - Fluids to help with any dehydration
 - Cerenia to help encourage appetite and treat subclinical nausea
 - Vitamin B12 to help strengthen immune system and digestive health
 - Probiotic (Fortiflora, Provable, Profivex) mixed in water and given daily
 - Can be offered on food first but avoid just adding to food
 - Some kittens dislike the flavor

Treatment Cocktail Ingredients: URI

- These kittens often are not eating well (or at all) and are not hydrating due to congestion
- Start with our mainstay of treatment cocktails
 - Subcutaneous fluids
 - Cerenia injection
 - Cerenia is an essential component in our treatment cocktail for URI
 - Congestion and nasal drainage often leads to nausea
- If kitten is not eating, start Nutrical to help battle hypoglycemia

Treatment Cocktail Ingredients: URI

- Cyproheptadine at very low doses
 - Treats congestion & stimulates appetite
 - Bitter!
 - Wrap in pill pocket
 - Crush and mix with water and karo syrup
- If showing signs of secondary bacterial infections (and eating), start antibiotics
- If severe ocular discharge, start warm compresses and ophthalmic antibiotics
- May need to continue fluids and Cerenia daily until kitten is eating
- Use fortiflora as flavor enhancer and to help strengthen immune system

Treatment Cocktail Supplies

- What supplies will we need for our cocktails
 - 25g butterfly catheter
 - Glass or cup with warm water for warming fluids
 - 1ml tuberculin syringes or U-100 insulin syringes
 - U-100 syringes are fantastic for dosing very small quantities
 - 1 unit is equal to 0.01ml
 - Must be sure you are using U-100 and not U-40 syringes
 - Tiny needle



Case Examples



Case 1

- 4 week old kitten presents with watery diarrhea (fecal score 7/7) with weight loss
- Foster does not report change in appetite, but kitten is losing weight
- This most likely indicates the kitten isn't eating enough and has weight loss from fluids lost in diarrhea

Case 1 Physical Exam

- Obtain weight, examine, evaluate general stability and start warming process
- Exam;
 - Weight 12.6oz (357g)
 - Moderate dehydration
 - QAR with no obvious signs of nausea
 - Pale mm with CRT 3 seconds
- Obtain fecal sample for testing
- Warming process
 - Bean bag warmed and fleece
- Give Nutrical 0.25ml PO



Case 1: Treatment Cocktail

- Get your cocktail ingredients prepped and ready
 - LRS 15mls warming in syringe
 - Cerenia 0.03ml
 - Vitamin B12 0.1ml
 - Propectalin/Profivex/Fortiflora in slurry form to syringe feed
 - ¼ tsp mixed with 1.5ml water
- Food options to evaluate appetite and/or syringe feed
 - Offer kitten food choices that are slightly warmed while starting treatment
 - Provides a distraction during treatment and helps us determine if/what kitten is eating

Case 1: Treatment Cocktail

- Begin subcutaneous fluids.
 - Give in a slow and steady manner
 - Allow kitten to move around some to decrease stress/anxiety
- Give Cerenia into fluid bubble
- Give slurry and any deworming and/or antiprotozoal needed
- Metronidazole if warranted

Case 1: Follow Up

- Kitten should be examined/treated by medical every day until response to therapy
 - Need accurate weight daily
 - Recommend daily fluid therapy and Cerenia injections
 - Continue treatment until signs start improving and weight is increasing
 - Continue probiotics either in food or as slurry syringed until diarrhea is improving



Case 2

- 5 week old kitten presents with severe URI
- Foster reports lack of appetite and mild lethargy for the past 24 hours
- Indicates probable hypoglycemia and anorexia

Case 2 Physical Exam

- Obtain weight, examine, evaluate general stability and start warming process
- Exam
 - Weight 1.1 pound (0.5kg)
 - Moderate dehydration
 - URI signs of audible congestion and green nasal discharge
 - Active signs of nausea
 - licking lips, drooling, gagging when food is offered
- Begin warming with bean bag warmed and fleece
- Give Nutrical 0.5ml PO



Case 2

- Get you ingredients ready for your cocktail
 - LRS 20mls warming in syringe
 - Cerenia 0.05ml
 - Vitamin B12 0.15ml
- While fluids are warming, use a warm damp washcloth to clean kitten's face of any crusted discharge
- Avoid attempting to feed at this point
 - Kitten is showing signs of nausea and we do not want to cause a food aversion
- Start your cocktail treatment

Case 2: Treatment Cocktail

- Allow injections time to become effective (1-2 hours) before offering food
- If kitten does not eat, can begin syringe feeding 2-3 hours after injections given
- Once kitten is eating or is taking syringe feeding well, start oral antibiotics for secondary bacterial infections
- Nebulizers are a great option for URI kittens
 - Make sure the nebulizing isn't stressful or may worsen URI
- Consider using Fortiflora as flavor enhancer and to possibly help strengthen immune system
- Kitten may need daily fluid therapy and/or Cerenia for nausea secondary to nasal drainage

Questions?

- Contact info
 - JBledsoeNix@spcawake.org



Treatment Cocktails for Pediatric Kittens

Common Illness Cocktail Ingredients

Diarrhea

- Warmed LRS
- Cerenia injection
- Vit B12 injection
- Propectalin/Profivex/Fortiflora
- Treatment of any underlying parasite or protozoa
- Antibiotics if appropriate
- Nutrical for hypoglycemia

Vomiting

- Warmed LRS
- Cerenia injection
- Vit B12 injection
- Nutrical for hypoglycemia
- Syringe feeding once vomiting and/or nausea are controlled

ADR (Ain't Doing Right)

Unhealthy kitten with no obvious cause; Unthrifty, weight loss or lack of weight gain

- Warmed LRS
- Cerenia injection
- Vitamin B12
- Syringe feeding once Cerenia has kicked in
- Fortiflora/Proviabio/Profivex either in food if kitten likes flavor or mixed in water and given daily as a syringed treatment

URI

Complicated URI presenting with other sick symptoms

- Warmed LRS
- Cerenia injection
- Syringe feeding once Cerenia has had time to be working
- Cyproheptadine for congestion and lack of appetite
- Consider oral and/or ophthalmic antibiotics if secondary bacterial infections
- Nutrical for hypoglycemia

Warming Bean Bag DIY

Step by Step Instructions

Supply List

- Empty dry 1 liter fluid bags
- Gorilla all weather tape
- Beans
- Funnel



Step 1

Obtain empty dry fluid bags

- ❖ Cut bottom of bag with port out and hang for 48 hours to dry
- ❖ Inside of bag can be dried with paper towels if needed

Step 2

Fill 2/3 of fluid bag with dried beans

- ❖ Pinto beans are my preferred choice



Step 3

- ❖ Fold end over twice and place tape to hold closed

Step 4

- ❖ Place tape overlapping each side to thoroughly secure



Instructions for Use:

- Microwave bag for 60 seconds in microwave
- Gently massage beans back and forth to distribute heat evenly
- Wrap in fleece, hand towel or blanket and place next to kitten
- Never place an uncovered warm bean bag directly on or next to kitten
 - Always wrap in fabric to prevent burns

Cleaning:

- Bean bag can be wiped off with a damp rag or pet safe cleaner
- Sanitize between litters
 - Soaking in 1:16 Accel for 5 minutes then
 - After 5 minute contact time, wipe dry
- Check for leaks between uses and repair with Gorilla tape if damage