

## Using Oxytocin

There seems to be some general confusion about when it is appropriate- if ever- to use oxytocin in our animals and naturally there is great difference of opinion in the three veterinarians who hold down positions on the Cavy Health and Husbandry Committee. Diverse opinion and experience is what we are all about! What we chose to do in this article is to give all three opinions on the use of oxytocin. Hopefully this helps and is a lead-in to one of the upcoming articles on dystocia. Some of the most important facts to note are when NOT to use oxytocin.

### Val Blaes

My use of the hormone oxytocin would be considered frugal at best. I am not one to induce normal, symptom-free sows just to be present at the birth. I'm too concerned that the pups might be premature and that would make me feel terrible. I will induce a sow that is becoming toxic if I think it may be the best way to save her. I have also on rare occasions given oxytocin to try and stimulate milk let down in a recently delivered sow. I will sometimes give oxytocin if a sow has started labor but has gone greater than 30 minutes with weak or low intensity contractions. I DO NOT give it if she has gone greater than 30 minutes with strong contractions - I would check for fetal malposition. Assuming all feels normal, I would let her continue on her own. In cases of true uterine inertia, oxytocin would be ineffective until the muscle has rested and recovered its contractility, assuming that it can. In any situation that I might or will give oxytocin, I will first administer sources of calcium and energy. For me, this means an oral concoction of crushed 1000mg TUMS dissolved in about 1 tbsp yogurt mixed with 1/2 - 1 tsp of karo syrup or honey.

In the last 10 years, I've probably used oxytocin less than 10 times, and I would say that there were only a couple of situations where I did not, that in hindsight, I thought I should have tried it.

### Cynthia Bishop

I have always been afraid to induce with oxytocin (they tell us never to do that in dogs/cats). If they are completely dilated and seem like they are taking too long between babies I have given oral calcium and then injectable oxytocin (IM or SC) about 15 minutes later. I have also used oxytocin intranasal to help with milk let down (works really well in the first 24-48 hours. I use 0.1-0.2 cc usually.

### Denise Talbott

Oxytocin is a powerful hormone that when used correctly can be of great benefit to sows and pups, and if use incorrectly can precipitate disasters. There are two general indications for the use of oxytocin in my caviary. The first is for labor induction and second is used when arrested labor present. Let me generally say this about oxytocin- receptors for this hormone must be present in the gravid uterus for oxytocin to have any effect on the uterus. Without these receptors being present, oxytocin will not cause uterine contractions and will not empty the uterus of fetuses. In other words, oxytocin is not an (effective) abortifacient and cannot be used for mismatings in covies (or any other animal that I know of). At what point you can induce premature labor is a question I do not know the answer to. I do know that I have had one sow that I felt needed to be induced and I was unable to get even a mild contraction after two injections (two injections are my limit- if I can't make it happen then, to me there are not enough receptors present to initiate effective labor). In other animals it has been shown that the

number of oxytocin receptors increased dramatically as the age of the pregnancy increased naturally lending the uterus more capable to sustain effective contractions.

- 1) Elective induction of labor. How do you decide if a pregnant sow is a suitable candidate for induction using oxytocin? Sows must be soft and mushy in the perineal area- in other words they are "ripe". They must have an open pubic symphysis, the wider the better. How can you tell how far the sow is really split? Stand her up on all fours and open up the hips by supporting one stifle and gently lifting it away from the midline while feeling the pubic symphysis. This separation is dynamic and will change with the mechanics of the sow's walking, etc. A minimum of 1 cm of separation is required in my opinion. Why would you induce? There are two basic reasons for induction in my caviary. The first is that the sow is in trouble with toxemia and the owner wishes to have the best chance of saving both the sow and pups. The second is because the owner wishes to be present at the birth. Really, why is that a good thing? If you have a sow that has a history of piling up her newborns like cordwood and not removing the fetal membranes, if you have a sow that you suspect has a large number of young that may overwhelm her, if you suspect that one or more of the pups may be large and require assistance/extraction to be born then when any of the above criteria have been met, in my caviary, induction may be "GO for launch". Other folks may have different opinions. I have kept records now for several years. I have greater than expected survival rates of mom and pups with induction and have yet to be sorry for inducing. On the other hand, I have been very sorry looking back to let nature take its course, which often involves loss of pups and/or the sow. So, I am a huge activist when it comes to parturition. Now, one word of warning. If you decide to induce, you need to be prepared for all problems you may face. If you aren't, better to leave induction in someone else's hands. Proper selection of the animals to be induced is critical. The actual mechanics of induction are fairly straightforward. I generally use a 2 unit dose per sow. Labor can ensue anywhere from 15-90 minutes following injection. If necessary to get things going, I will use a second injection. After two injections and I can't get the sow into good labor, the mission is aborted. There seems to be some discussion of how long oxytocin persists, I cannot find any supporting literature for any opinion, so my protocol is entirely my own. I do not routinely prime the normal animal with calcium before I induce. Some folks do- I think it personal preference and what your past experience dictates. Once all the pups have arrived, I will administer one last 2 unit dose of oxytocin to make sure the sow cleans (expels all the fetal membranes and placentas).
- 2) Arrested labor/uterine inertia. What I consider arrested labor-when a sow delivers part of litter and then labor seems stalled. I am a firm believer in getting all the pups out at one time and not allowing hours to pass between the birth of the pups. I will not let sows sit for 24 hours with a partial litter delivered. Sometimes things work out just fine when the sow has lengthy periods between births, many times they do not. Once I have a sow that has delivered at least some of her pups, I think it is in her best interest and in the remaining pups' interest to get everyone delivered. This is the time when I will use calcium and glucose (administered orally or injectable) before I use oxytocin. If I can identify the cause for the arrested labor, I try to correct it. Let me just say that I consider an exhausted sow to be a very serious situation often with

poor outcome for both sow and pups. For arrested labor I use the same 2 unit dose as before. Usually I have felt to see the next pup's presenting parts, how far inside it still is, etc. Sows that I cannot get back into labor are candidates for manual extraction of the pups, a cesarean section or euthanasia (with or without survival of pups still in the uterus). Some folks will leave these sows sit for a day until the pups are dead and the sow is toxic. Once again, I am an activist and sometimes that activism includes a humane euthanasia after all failed attempts vs allowing the sow to become toxic and die a day later.

When NOT to use oxytocin!

- 1) If your sow's pubic symphysis has not opened and you decide to use oxytocin, you are inviting disaster.
- 2) If your sow is already contracting in a good pattern, using oxytocin will not make the contractions any better and may possibly help precipitate uterine inertia/exhaustion by "overloading" the system. If the sow is contracting, her uterus is already doing what it was meant to do.

Again, proper selection of the sow to be induced is paramount and induction needs to happen in a controlled and watchful fashion. These are not sows that you inject and turn your back on. I also think you need to keep careful records on your births- survival of the sows, note any difficulties that may want addressing in the next litter and I give a number such as 3/5 where the first number is the number born live out of the total number of pups represented by the second number. After multiple years of accurate record keeping and experimentation- once a string of 19 sows in which I lost only one pup and no sows- I am convinced that induction has a very important role in my caviary.