

# Periparturient Diseases in the Dam

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## KEYWORDS

• Periparturient • Lactation • Dam • Diseases • Neonates

## KEY POINTS

- Understanding the physiologic, physical, and hormonal changes that occur in the dam around the time of delivery helps identify and treat reproductive diseases during this unique time.
- All pharmacologic therapy prescribed for a dam affects her offspring, often creating a challenge in balancing her medical needs with the health of the neonates.
- Early recognition of disease relies on daily evaluation of the dam's attitude, body condition, appetite, and maternal behavior.

## INTRODUCTION

This article provides an overview of some of the most common diseases affecting the dam in the periparturient period, including disorders of lactation, inappropriate maternal behavior, mastitis, metritis, and eclampsia. The dam experiences hormonal, physiologic, and physical changes during pregnancy, parturition, and lactation. Obtaining a detailed history and performing a thorough physical examination are essential for accurately diagnosing and treating the dam during this unique time. A particular challenge exists when identifying problems in the periparturient period because all medications and aspects of management impact the health of both the dam and her offspring.

## AGALACTIA

Agalactia is a failure of the dam to provide milk to the neonates. Primary agalactia is rare and results from an anatomic or physiologic abnormality causing a lack of mammary gland development and milk production.<sup>1</sup> A defect in the pituitary ovarian mammary gland axis is suspected to be the cause.<sup>2</sup> Secondary agalactia results from low milk production or decreased let down of milk into the teat canal.<sup>3</sup> Often the lack of milk supply is identified within 2 to 3 days postpartum when the neonates fail to

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The author has nothing to disclose.

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gain 5% to 10% of body weight daily. Normally, mammary gland development is evident by day 45 of gestation and milk secretion starts at or shortly after parturition.<sup>4</sup> Prolactin hormone plays a pivotal role in milk production. During late gestation when progesterone is decreasing, prolactin increases and subsequently increases again when the neonates start to suckle.<sup>4</sup> Prolactin production receives both inhibitory and stimulatory signals. Dopamine is a main inhibitory factor of prolactin<sup>5</sup> and the relationship is important for modulating milk production with drug therapy. At parturition, the dam produces, thick, yellow colostrum. With the stimulus of neonates nursing, milk production increases to reach peak lactation at 3 to 4 weeks. Early intervention to correct agalactia will ensure that the neonates receive adequate nutrition.

### ***Physical Examination and Diagnosis***

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Primary agalactia is atypical and is characterized by an absence of mammary gland development and milk production.<sup>6</sup> Secondary agalactia is more common and results from either a lack of milk let down or poor milk production.<sup>3</sup> Mammary glands may be developed, but milk production is low or milk cannot be readily expressed owing to a lack of milk ejection from the teat sphincters.<sup>2,7</sup> There are several possible causes for agalactia.<sup>3,8</sup>

- Concurrent medical conditions: malnutrition, systemic illness, premature parturition, progesterone therapy, mastitis, metritis, endotoxemia, stress, and pain from a cesarean delivery.<sup>1,3</sup>
- The dam is highly nervous and anxious and the production of adrenalin blocks the release of oxytocin from the pituitary.<sup>7</sup>
- The dam has a large litter with high lactational demands.
- The dam has poor appetite and is unwilling to consume adequate nutrition.

### ***Pharmacologic Treatment***

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Primary agalactia does not respond to medical therapy.<sup>3</sup> Medical therapy for secondary agalactia, including lack of milk ejection and milk production, focuses on treating and resolving any concurrent diseases, relaxing the anxious dam, and/or providing a stimulus for milk ejection and production.

- Administer intravenous or subcutaneous fluids to dams that are ill, dehydrated, or have a poor appetite.
- Oxytocin stimulates milk ejection by causing contractions in the myoepithelium surrounding alveolar ducts; however, it lacks galactopoietic properties.<sup>5</sup>
  - If lack of ejection is noticed early, give oxytocin 0.25 to 1 U (per dam) subcutaneously (SQ) every 2 to 4 hours for 1 to 2 days. Neonates are removed for 30 minutes after injection, and then returned to suckle, or gentle stripping of the glands can be performed and neonates are bottle or tube fed.<sup>2,9</sup>
  - Oxytocin nasal sprays have anecdotally been reported to enhance milk let down and also improve maternal behavior in dams.<sup>3,10</sup>
- Metoclopramide is an antiemetic; however, it antagonizes dopamine at receptor sites and promotes an increase in prolactin and milk production.<sup>6</sup>
  - Give metoclopramide 0.1 to 0.2 mg/kg SQ or orally (PO) every 8 to 12 hours.<sup>2</sup> A response is typically noted in 24 to 48 hours<sup>2</sup> and therapy continues for 2 days beyond desired milk production. Extrapyrarnidal side effects, such as restlessness, agitation, and ataxia, are more common at higher dosages and the dose should be reduced if there is concern about a dam's behavior and safety with her litter.<sup>5</sup>

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