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# Postpartum Agalactia Syndrome and Udder Oedema in Sow

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Agalactia is a condition that shows absence of milk production in an animal that should be producing milk after parturition**.** The condition is also called post-partum dys-agalactia and farrowing fever. This pathological condition consists of an inflammatory reaction of the udder (mastitis), reproductive tract (metritis) resulting in poor release of milk or reduction of its production (Agalactia). Also, the accumulation of fluid in the subcutis and deep into the udder tissue. The etiology of this condition has not been identified but suspected to be multifactorial. The condition shows reduced lactation or even no lactation just after parturition. The condition is seen both in sows and gilts under farrowing. As a result, piglets suffer from futile suckling and will lose body weight rapidly**. Mastitis, metritis and agalactia (MMA) is a complex syndrome seen in sows shortly after12-72 hours post farrowing which mostly due to infectious origin. The morbidity of this condition about 6-10% of the total sows (**Hermansson, *et al*., **1978).**

## Causative factors agalactia

Overall sow agalactia is mostly non-infectious, but it may occur in groups of sows and gilts exposed to certain common factors, such as water deprivation or teat damage by piglets, in successive batches. Hereditary factors may be transmitted vertically, from sow to female offspring. Bacterial infections cause of agalactia is transmitted by the routes of transmission. Therefore a wide range of etiological factors are responsible for this condition (Kemper, 2020). Agalactia resulting from reduction in sucking by piglets may result from infectious disease in the litter. Some common causes of agalactia in sow and gilts are as follow

- It is seen few days after farrowing (1-4days post farrowing)
- Older sows and excessive body condition
- Deprivation of water, nutrients and vitamins during gestation
- Bad design of the farrowing crates.
- Sequelae of edema or mastitis.
- Poor hygiene of farrowing crates and farrowing rooms
- Infections with bacteria (*E.coli*, *Klebsiella* sp, *Mycoplasma* sp., *Streptococcus* sp and *Staphylococcus* spp)
- Viral infection like Porcine reproductive and respiratory syndrome (PRRS)
- Breed variations of pigs and their production level (Gruen, et al., 1993)
- Farrowing pain during piglet delivery from sow

**Causes of udder oedema**

- High amount of potassium intake during dry period, causes retention of fluid
- Increase in hormones chromogranin A (stress factor) and cortisol (Kaiser et al, 2018)
- High level of energy and less fibre feed during last phase of gestation
- Lack of exercise during pregnancy
- More excitement and fear during pregnancy

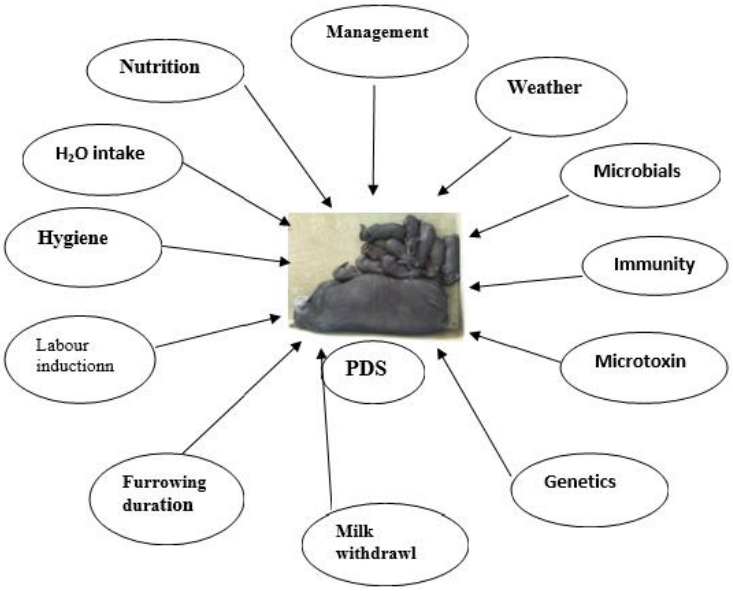


**Fig-1: Risk factors affecting porcine Agalactia Syndrome (PDS)**

## Pathogenesis

In infectious cases the bacteria enter through teat canal and invade mammary tissue, produce endotoxin/exotoxins cause tissue reaction and initial rise of body temperature, depression, anorexia and agalactia. The toxins affect hypothalamus hypophysis that suppress the prolactin hormones that helps milk production. In non-infectious causes such as stress, change in feed, overfeeding cause mammary swelling of sow.

**Clinical signs**-The clinical signs of the condition that affects both the sow and its piglets. Therefore, the clinical signs of both the sow and piglets are to be considered after farrowing.

### Lactating sows

- May or may not be loss of appetite
- The animal may suffer from fever later may be normal temperature
- Mammary glands/tissue is not properly developed or it is reabsorbing.
- Mammary glands maybe well developed, but there is scanty milk production.
- It may show as an infection in the urinogenital system
- Constipation and engorged udder is painful
- Apathy towards piglets due to pain and metabolic upset
- Fatty udder without milk
- Purulent discharges from vulva due to infections
- Dyspnea and tachypnoea are the most characteristic in bacterial and viral infections

### Deprived piglets

- Weak and starving piglets from milk with empty stomach
- Litter size decreasing trends due to mortality in first few days of life.
- Piglets may bite teat and it may further deteriorate the sow's condition
- Diarrhea and hypothermia if survive few days.

## Diagnosis

The diagnosis can be made by the clinical signs and physical examinations of udder, teat and milk letting conditions. Litter weight and litter size can impart an idea about occurrence of agalactia. Piglets

which die of starvation can be ascertain by post mortem study with empty stomach and intestines. On physical examination of teat and udder lacking of milk and is "drying up", or the udder may be hard with oedema or fluidic thrill. Mastitis may also develop as a result of infection. Post-mortem examination is rarely carried out for diagnosis agalactia as sow death rate is rare in such cases. The teats are easily examined post-mortem and the presence of mastitis can be confirmed by bacteriological studies. A non-functioning gland for the absence of mature milk-forming tissue can be revealed necropsically with extensive oedema and mild hemorrhage (Radostits *et al.*,2000).

## Therapeutic intervention

Due to pain for long time furrowing (3-4 hours) a couse of nonsteroidal anti-inflammatory drugs (NSAID) and other may be given (Pendl, *et al*., 2017). MMA syndrome may be treated with systemic antibiotics and suppository treatment for uterus and genital tract. A course of antibiotic injection may be given with amoxycillin cloxacillin, tetracycline, gentamicin, cephalosporin etc for 3-5 days. Uterine flush can be made with providone iodine 3ml/1L luke worm water. Supply of ad libitum clean water during gestation period. Piglet suffers from milk inanition may be supplemented with milk replacer with sufficient amount300-500ml daily in divided doses. Piglets may also be given oral glucose (5%) for 2-3 days. Small doses of oxytocin (20- 50 units ie 1.5-5.5ml) may be given 6 hourly can help to letdown the milk and stimulation of uterine contraction and hot water fomentation and massaging may be given. Piglets should be placed neat teat to sucle it for stimulation.

## Prevention

The mastitis metritis agalaction can be controlled by keeping the animal and animal byre dry and cleaned. Furrowing pen must be cleaned dry with disinfectants. Animal may be washed with cleaned water before sending furrowing pen (Hulten, *et al*., 2004). During third trimester of pregnancy the animal should be undergone mild exercise. Avoid dirty and slippery floor, wet and filthy flour promote bacterial propagation (Perestrelo *et al*., 1994). Over feed is to be restricted to keep the sow/gilt under fit and avoid fatty signs. Adequate cleaned water (15-25L) may be provided daily. Vaccination with the vaccine available whatever may.

## References

Gruen, D., Reiner, G., and Dzabo, V. (1993). Investigations on breed differences in milk yield of swine. II. Commitment: milk composition and its relation towards piglet development during suckling period. Reproduction in Domestic Animals,**28**:22–27

Hermansson, I., Einarsson, S., Larsson, K., Bäckström, L.(1978) On the agalactia post partum in the sow. A clinical study. *Nordisk*Veterinary Medicine. 1978 Nov;30(11):465-73. PMID: 281669.

Hultén, F., Persson, A., Eliasson-Selling, L., Heldmer, E., Lindberg, M., Sjögren, U., Kugelberg, C., and Ehlorsson, C. J.(2004). Evaluation of environmental and management-related risk factors associated with chronic mastitis in sows. *Am. J. Vet. Res*. 65:1398–1403. doi: 10.2460/ajvr.2004.65.1398

Kaiser,M., Jacobsen,S., Andersen,P.H., Bækbo,P. Cerón,J.J., Dahl,J., Escribano,D., Theil,P.K., and Jacobson, M. (2018). Hormonal and metabolic indicators before and after farrowing in sows affected with postpartum dysgalactia syndrome. BMC Veterinary Research 14:334 https://doi.org/10.1186/s12917-018-1649-z

Kemper, N.(2020), Update on postpartum dysgalactia syndrome in sows. J Anim Sci. 2020 Aug 18;98(Suppl 1):S117-S125. doi: 10.1093/jas/skaa135. PMID: 32810252; PMCID: PMC7433910.

Pendl, W., Jenny, B., Torgerson, P. R., Spring, P., Kümmerlen, D., and Sidler, X.. (2017). Effect of herd health management on the prevalence of postpartum dysgalaktie syndrome (PPDS) and the treatment incidence. *Schweiz. Arch. Tierheilkd*. 159:109–116. doi: 10.17236/sat00105

Perestrelo, R, Perestrelo, H, Madec, F, Tillon, .J.P.(1994) Prevention of metritis-mastitis-agalaxia syndrome in sows. Vet Res. 25(2-3):262-6. PMID: 8038797

Radostits, O.M., Gay, C.C., Blood, D.C, and Hinchcliff, K.W.(2000) Veterinary Medicine: A text book of the diseases of Cattle, Sheep, Pig, Goat and Horses.WB Saunders Co.Ltd, 9th Edn, Pp-692-697