No effect of parity on concentrations bovine pregnant associated glycoprotein (PAGs) measurement by radioimmunoassay

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Introduction

Pregnancy-associated glycoproteins constitute a large family of molecules specifically expressed in the outer epithelial cell layer of the placenta in eutherian species.

These proteins are members of the aspartic proteinase family, having high sequence homology with each other as well as with pepsin, pepsinogen, chymosin, cathepsin D and E and renin (Xie *et al*., 1991)

The detection of these placenta-secreted proteins in maternal peripheral blood can be used for early pregnancy diagnosis in cattle from Day 28 of gestation onwards (Zoli *et al.*, 1992).

AIM

The present study was undertaken to explore the effect of parity on PAG concentrations during the first trimester of pregnancy by use of homologous and heterologous RIA systems.

Materials and Methods

- Thirty-seven Holstein Friesian females (4 nulliparous, 12 primiparous and 21 multiparous) with mixed age were followed at different periods after artificial insemination: Days 21, 30, 45, 60 and 80.
- Blood samples were removed from the coccygeal vein into tube containing EDTA. The plasma was obtained by centrifugation (1,500 x *g*, 15 min) immediately after collection and stored at -20 ℃ until assay.
- In all RIA systems, 67 kDa PAG preparation was used as tracer (labeled with ^{125}I according to the Chloramine T method) and as standard.
- Five antisera were raised in rabbits against different PAG preparations according to the technique of Vaitukaitis.
- Plasmatic PAG concentration was measured by radioimmunoassay technique with some modifications (Ayad *et al*., 2007,)

Results

- PAG concentrations tended to be higher in primiparous than in nulliparous females.
- On the other side, PAG concentrations were equal or higher in primiparous than in multiparous cows (excepting at Day 80 by using RIA-809).
- However, due to the small number of pregnant females in the three groups, differences could not be considered as significant.

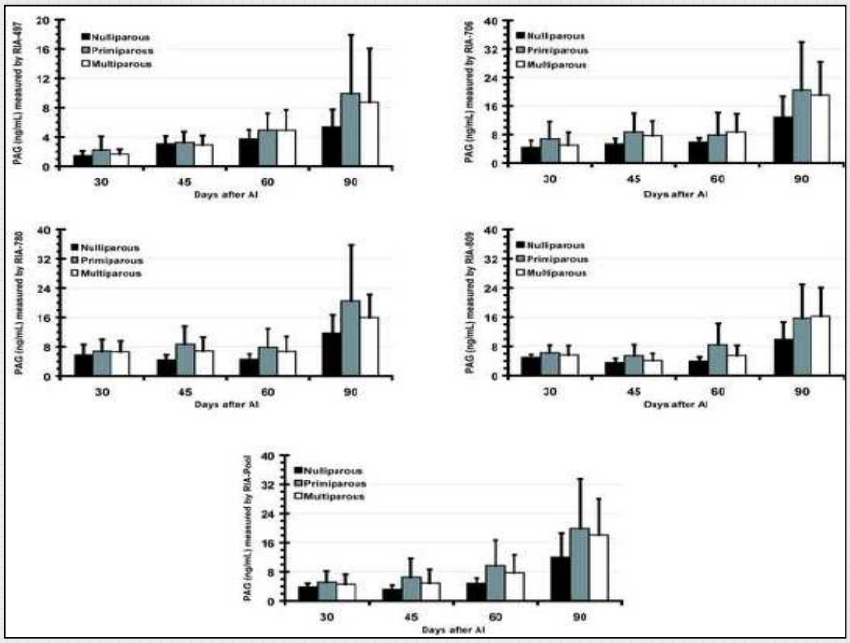

Figure: Mean (± SD) concentrations of PAG in nulliparous, primiparous and multiparous pregnant Holstein Friesian females from day 30 to 80 after AI.

Conclusion

In conclusion, parity had no significant effect in plasma PAG level. Further investigations are to be carried out in order to better understand PAG secretory profiles according to parity status.

References

- Ayad et al., 2007.. Reproduction in Domestic Animals 42, 433-440.
- Xie et al., 1991. Proceedings of the National Academy of Sciences of USA, 88, 10247-10251.
- Zoli et al., 1992b. Biology of Reprodution 46, 83-92

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