

Hormone levels differ between cow recipients carrying *in vivo* or *in vitro*-derived conceptus during early pregnancy

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Introduction

In order to better mimic the natural environment, natural reproductive fluids (RF), have been proposed as additives for embryo culture and results from RF-derived embryos after transfer (ET) have not shown adverse effect on pregnancy rate at day 30 when compared to a control (BSA). However, it is unknown what happens from day 30 onwards, and if the embryo source has any effect on maternal endocrinology of pregnancy and on pregnancy outcome itself.

Objective

This study aimed to assess if the transfer of embryos cultured with RF (oviductal and uterine fluids) as supplement to IVC medium have any influence on recipients' Progesterone (P4), Estradiol (E2), Cortisol and Anti-Müllerian hormone (AMH) levels and if those might have an influence on recipient's pregnancy outcomes.

Materials&Methods

Pregnant recipients, carrying conceptus from **3 sources**:



x12

in vitro RF



x10

in vitro BSA



x8

in vivo AI

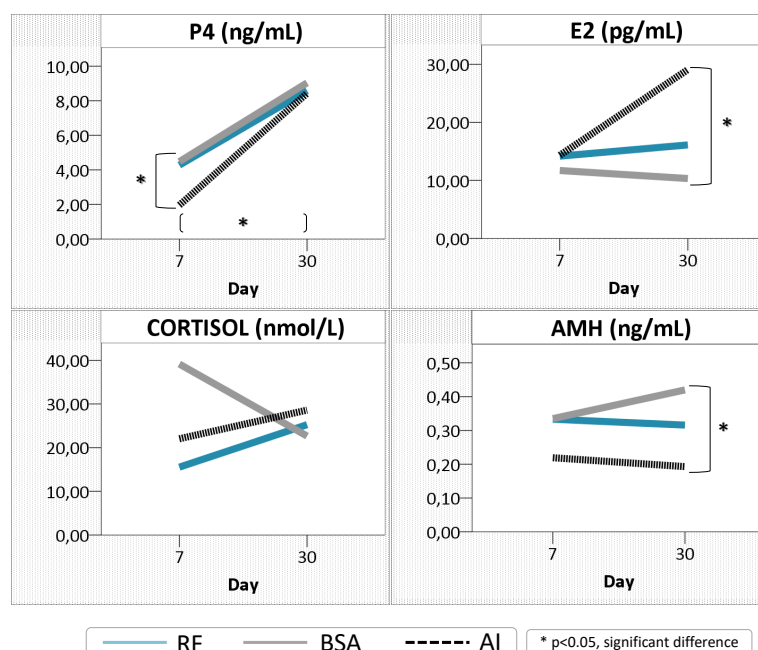
The same bull was used in both *in vitro* & *in vivo* embryo production

Blood collection

- Day 7
- Day 30

Results

- **P4** was lower for AI vs. both RF & BSA groups on day 7. Day 7 P4 was lower than day 30, independently of the group.
- **E2** was higher on day 30 for AI vs. BSA.
- **Cortisol** was not statistically different between groups.
- **AMH** was higher on day 30 for BSA vs. AI.



Conclusions

- **AMH** and **E2** levels at **day 30** were significantly **different** between recipients carrying **AI vs. BSA** embryos while recipients from RF group showed an intermediate value.
- **P4** values, **7 days post-AI vs. day of ET** were significantly **lower for AI vs. ET** recipients, but those differences **disappeared by day 30**.

Our data show that the **embryo source influences hormonal levels** at day 30 of pregnancy. It remains to be further investigated how these levels evolve through the whole gestational period and if they affect pregnancy outcomes.