Dokumenttyp: Zeitschriftenaufsatz


Titel des Beitrags: Effects of human chorionic gonadotropin on luteal blood flow and progesterone secretion in cows and in vitro-microdialyzed corpora lutea

Abstract: To check human chorionic gonadotropin (hCG) effects on luteal blood flow (LBF) and progesterone (P4) synthesis, six cows received either 3000 IU hCG or saline (NaCl) on Day 7 (Day 1=ovulation) during two estrous cycles. Plasma P4 and LBF were measured before (0h) and up to 48h after treatment. Luteal blood flow increased by 51% (P <0.05). Additionally, central and peripheral parts of 14 abattoir-derived corpora lutea of the mid-luteal phase (Day 8 to 12) were perfused with Ringer solution in an in vitro microdialysis system, supplemented with 50 or 150 IU/mL hCG for 1h. Application of 50 IU/mL hCG showed no influence on P4 response (P >0.05) in both central and peripheral parts, whereas 150 IU/mL hCG resulted in an increase of P4 synthesis (P =0.002) in the central parts only. In vivo, hCG provoked an immediate and long-term rise in P4 but only a temporary elevation of LBF. Luteal blood flow itself does not seem to be the exclusive cause for an increase in P4, because the in vitro data clearly showed direct effects of hCG on P4 secretion. Interestingly, different P4 secretion patterns could be found between central and peripheral parts of the corpus luteum in both control and hCG perfused corpora lutea.

Stichworte: Corpus luteum; hCG; Luteal blood flow; Microdialysis; Progesterone