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TITLE

ANGIOGENESIS IN THE HUMAN CORPUS LUTEUM. POTENTIAL VASCULAR ACTIONS OF 2-METHOXYESTRADIOL

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ABSTRACT

The human CL a temporary endocrine gland produces up to 40 mg progesterone (P4) per day in addition to E2 and androgens. This steroid secretion determines menstrual cyclicity and endometrial receptivity for successful implantation and maintenance early pregnancy. Thus the fundamental endocrine, auto/paracrine and molecular mechanisms controlling P4 secretion at the time of pre-ovulatory follicular, cell luteinization and during development and rescue of the CL is paramount for the understanding a fertile cycle. Recent advances, particularly the genome analyses , improved our understanding of various local factors and cellular processes associated with the development, maintenance and regression of the primate CL. However, areas of mystery and controversy remain regarding the signalling that initiate luteal regression of CL in non- conception cycle. Changes in LH pulses and declines in LH receptor mRNA and protein do not account for luteal regresión in primates. These findings suggest that steroidogenic function and regression of the CL are determined by factors down stream from the LH receptor. Recent findings from our group suggest that estrogens metabolites (EMs) like 2-ME2 and 2-ME1 have a prominent anti angiogenic role during luteal regresion. In vitro-study demostrates that 2-ME2 and 2-ME1 reduce VEGF production and angiogenic activity by luteal granulosa cells (LGCS) in culture. P <0.05. Interestingly early and mid tissue CL have a prominent vascular net work concomitant with greater concentrations of 16-keto E2 and 4-OH E1 These compunds favor veseel formation and angiogenic activity suggesting that these EMs play a significant role in de vascular development of early and mid CL. In summary, our observations suggest that EMs family could influence the development and demise the CL structure of non conceptive cycle.

INSTITUTE

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