Regulatory role of angiotensin II on progesterone production by cultured human granulosa cells. Expression of angiotensin II type-2 receptor

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The role of angiotensin II (Angll) in ovarian steroidogenesis is not clearly understood. In order to study its action on progesterone synthesis and to determine which receptor subtype is involved, granulosa cells obtained from women undergoing in-vitro fertilization were cultured for2 or4 days and then incubated in the presence of Angll (10-7 M) with or without human chorionic gonadotrophin (HCG,10 IU/ml) for3 or18 h. In cells cultured for2 days, incubation with Angll decreased progesterone secretion by36%, and inhibited activity of3?-hydroxysteroid dehydrogenase (3?-HSD) by87% (P <0.05), although its expression was not significantly reduced. However, in cells cultured for 4 days, progesterone production was enhanced by incubation with Angll (38%), and no change was observed in 3?-HSD expression. Both inhibitory and stimulatory effects were dose-dependent. Progesterone secretion was increased (93%) by incubation with HCG of cells cultured for4, but not for2 days, and no potentiation wa