

Influence of serum from pregnant women and selected pregnancy hormones on in-vitro maturation of murine oocytes

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摘要

Abstract

Maturation medium for in-vitro maturation (IVM) is usually supplemented with serum. The objective of this study was to investigate whether serum from pregnant women had any adverse effects on IVM, and if so, whether the hormonal changes in pregnancy played a role. Serum was obtained from 40 pregnant women and was analysed for oestradiol, prolactin, beta-human chorionic gonadotrophin (beta-HCG), progesterone and testosterone. In the first part of the study, immature murine oocytes were cultured in maturation media supplemented with various sera. The control group was supplemented with 10% serum from fertile women, and groups 2-5 were respectively supplemented with 10, 20, 40 and 80% serum from pregnant women. In the second part of the study, immature murine oocytes were matured in the medium with the addition of different hormones according to the concentrations found in the serum of pregnant women. Compared with the control group, the maturation and fertilization rates were significantly lower in medium supplemented with 10% serum from pregnant women (59.7 versus 71.5% and 60.1 versus 77.0% respectively, both $P < 0.05$). There was a trend of decreasing maturation and fertilization rates with increasing concentrations of serum from pregnant women. Addition of prolactin, beta-HCG, progesterone and testosterone also impaired oocyte maturation.