

EFFECTS OF EXOGENOUS GONADOTROPHIN STIMULATION ON OVARIAN TISSUE GRAFTS IN THE MOUSE

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Ovarian tissue grafts commonly contain only limited numbers of follicles. The functional life span and ability to retrieve as many mature oocytes as possible from ovarian grafts is important when grafting is used to restore fertility. This study aimed to determine whether ovarian grafts responded to exogenous hormones in a similar manner to that of in situ ovaries. Ovaries of C57BlxCBA F1 mice were cut in half and grafted to one of three different graft sites in females of the same F1 line; bursal capsule (BC, n=12), kidney capsule (KC, n=6), subcutaneous tissue (SC, n=24). Three weeks after grafting, half of the graft recipients in each group were treated with 5IU PMSG followed by 5IU hCG 48 hours later. Oocytes were collected directly from the grafted ovaries 10 hours after the hCG injection and fertilized in vitro. Oocytes from the ovaries of superovulated normal mice (n=4) of the same hybrid strain were used as controls. Two-cell embryos were transferred to pseudopregnant recipients and collected at day 15 of gestation or the animals were allowed to go to term. Mature fertilisable MII oocytes were retrieved from stimulated grafts from all graft sites, however, the number (BC 9, KC 5, SC 2 oocytes per ovary) and proportion of two-cell embryos in each grafted group (BC 52%, KC 32%, SC 32%) was significantly ($P<0.05$) lower than in the in vivo matured control (16 oocytes, 85% two-cell). The fetal and placental weights of fetuses produced from graft-derived oocytes were not significantly different to the control group. Phenotypically normal pups were born in each of the graft and control groups. In conclusion, ovarian grafts treated with exogenous gonadotrophins produce significantly fewer mature oocytes and two cell embryos compared to in situ ovaries. *Work supported by ARC and NIH RFA.*