Effect of oral contraceptive on the development of mouse embryos

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H.M. Ashmaoui and F. Abou-Tarbush
Department of Zoology, College of Science,
King Saud University, Saudi Arabia

ABSTRACT

Inbred normal adult SWR mice were used to investigate the possible teratogenic effect of Microginon 30 [0.15 mg leronorgestrel(L) +0.03 mg ethinyloestradiol (E), as an oral contraceptive on fetuses of females receiving doses from day 7 to day 12 of pregnancy. Treatment at doses 0.48L + 0.096E, 0.72L +0.144E, 0.96L +0.02E and 1.20L +0.24E mg/kg body weight significantly increased the fetal mortality rate and decreased the mean number of live fetuses. Also, a decrease in live fetal body weight occurred at dose 1.20L + 0.24E mg/kg. Furthermore, at doses of 0.72L + 0.192E and 1.20L + 0.24E mg kg , the number of implantation sites was significantly decreased.

External malformations including abnormal hind limb, abnormal tail and exencephaly have been induced in low frequencies by the doses 0.48L + 0.96E and 1.20L +0.24E mg/kg.

Key words: *Oral contraceptive, mouse embryos.*

INTRODUCTION

Oral contraceptives are intended for prolonged use by many people. It is important, therefore, to find out the harmful side effects after the administration of these sex hormones as contraceptives during pregnancy as shown by Lipschutz *et al.*, (1966).

It is believed that spontaneous premature abortion and other problems in pregnancy may be related to hormonal disfunction. Subsequently, a large number of research has documented the complex hormonal changes that take place following conception (Hafez&Evans, 1973). Various workers began to use female hormones with seemingly encouraging results (Ferguson, 1953 and Smith & Smith, 1954).

At first, therapy of natural estrogens on a large scale was severely curtailed by difficulties in the purification and by their low activity when given by mouth. This situation was changed with the advent of diethylstillestrol (DES). Because of slow degradation, this compound was long acting and potent. Soon, other estrogenic compounds more chemically akin to natural estrogens came into widespread use; the most potent of which being ethinylestradiol (Murad & Gilman, 1975). DES and closely related chemicals such as dienestrol, as well as chemically modified natural estrogens, were used in the treatment of threatened abortion or premature labor. Soon, they were also advocated as preventive therapy for women giving histories of unsatisfactory pregnancies (Ferguson, 1953).