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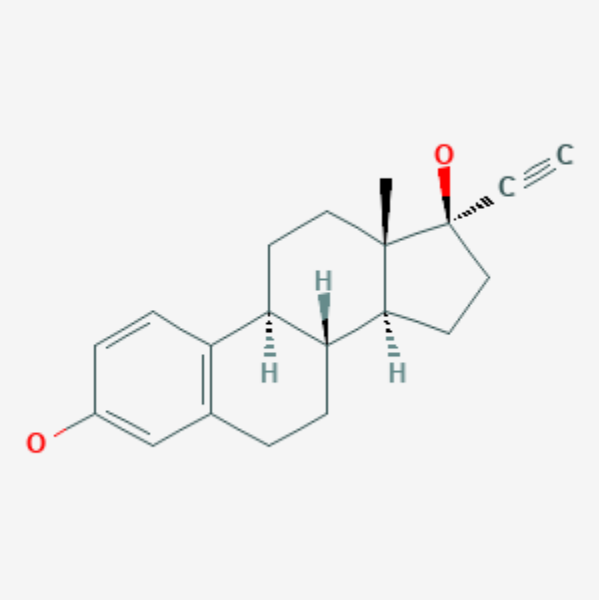
Ethinyl Estradiol

Revised: February 17, 2020.

CASRN: 57-63-6



Drug Levels and Effects

Summary of Use during Lactation

This record contains information specific to ethinyl estradiol used alone. Users with an interest in an oral contraceptive should consult the record entitled, "Contraceptives, Oral, Combined."

There is little information available on the use of ethinyl estradiol alone during breastfeeding. Levels in milk appear to be low. Based on studies on oral contraceptives that contain ethinyl estradiol, immediate side effects such as breast enlargement appear to occur rarely. It seems likely that doses of 30 mcg daily or greater can suppress lactation. The magnitude of the effect on lactation likely depends on the dose and the time of introduction postpartum, but data are not adequate to accurately define these doses and times.

Drug Levels

Maternal Levels. Four women who were fully nursing their infants were given a contraceptive containing ethinyl estradiol 50 mcg and megestrol acetate 4 mg beginning at 2 months postpartum. Another 4 women who were 6 to 18 months postpartum were given a single dose of 500 mcg of ethinyl estradiol. After 10 days of therapy, ethinyl estradiol was undetectable (<50 ng/L) in the milk of women who received the 50 mcg dose at several times after the dose. In those who receive 500 mcg, peak milk levels usually were found in the 3-hour sample although the peak was found in the 7-hour sample in one. Peak milk levels ranged from about 170 to 300 ng/L; levels dropped rapidly and were usually undetectable by 23 hours after the dose. Based on the higher dose, the authors estimated that a fully breastfed infant whose mother was taking 50 mcg of ethinyl estradiol daily would receive a dose of about 10 ng daily.[1]

Milk was collected and pooled from 2 groups of women who were taking ethinyl estradiol 100 mcg 3 times daily either immediately postpartum or after 1 to 6 months postpartum. Milk samples were collected 2 hours after the dose. Pooled milk was bioassayed for estrogenic activity and compared with the milk from lactating mothers taking no exogenous estrogens whose milk was collected at various times postpartum. No estrogenic activity was detected (<10 ng/80 mL of pooled milk [<0.125 mcg/L]) from women taking ethinyl estradiol above background estrogenic activity found in control colostrum.[2]

Infant Levels. Relevant published information was not found as of the revision date.

Effects in Breastfed Infants

Published information was not found as of the revision date on the effects of ethinyl estradiol alone on breastfed infants. However, case reports exist of breast enlargement in the infants of mothers taking combination oral contraceptives that contained ethinyl estradiol or its prodrug, mestranol.[1,3-5]

Effects on Lactation and Breastmilk

Published information was not found as of the revision date on the effects of ethinyl estradiol on milk production. However, numerous studies on combination contraceptives containing ethinyl estradiol or its prodrug mestranol indicate that doses of 30 mcg daily or greater might interfere with lactation.[6-11] One study that used a contraceptive containing 10 mcg of ethinyl estradiol found no effect on lactation.[12]

A retrospective cohort study compared 371 women who received high-dose estrogen (either 3 mg of diethylstilbestrol or 150 mcg of ethinyl estradiol daily)during adolescence for adult height reduction to 409 women who did not receive estrogen. No difference in breastfeeding duration was found between the two groups, indicating that high-dose estrogen during adolescence has no effect on later breastfeeding.[13]

Alternate Drugs to Consider

Estradiol

References

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Substance Identification

Substance Name

Ethinyl Estradiol

CAS Registry Number

57-63-6

Drug Class

Breast Feeding

Lactation

Estrogens

Estrogenic Steroids, Alkylated