



## Intrauterine Copper Contraceptive

Revised: January 20, 2020.

### Drug Levels and Effects

#### Summary of Use during Lactation

The copper IUD is acceptable to use during breastfeeding as a long-term contraceptive. It has been studied extensively during lactation in comparison with other forms of contraception and does not affect lactation performance or the milk copper concentration. In women who are breastfeeding, insertion of the device should be after 4 weeks postpartum. A meta-analysis found that uterine perforation with IUD insertion was 6 to 10 times more likely in breastfeeding mothers than in non-breastfeeding women, but that the risk of expulsion was no greater in breastfeeding mothers.[1] A more recent prospective study found a slight increase in the risk of expulsion of intrauterine devices with breastfeeding,[2] and the American College of Obstetrics and Gynecology recommends that women be counseled that immediate postpartum insertion may have a higher expulsion rate than later insertion.[3] The copper IUD is considered to be the most effective emergency contraceptive when inserted up to 5 days after unprotected intercourse.[4]

#### Drug Levels

*Maternal Levels.* The effects on maternal copper metabolism during breastfeeding were compared in 3 groups of women. Two groups used copper-containing intrauterine devices (Copper 380A [n = 33] and Copper 200B [n = 29]), and a third group that did not use any IUD (n = 33) served as control. Milk samples were collected at 10 weeks postpartum before insertion and 6 weeks after insertion of the devices from 21 women in the first study group, 22 in the second study group and 20 women in the control group. Milk copper concentrations ranged between 0.25 and 0.31 mcg/gram of milk in the various groups before and after insertion. No statistically significant difference in milk copper levels were found before and after 6 weeks in the IUD groups and between the copper IUD groups and in women who did not receive a copper IUD.[5]

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

#### Effects in Breastfed Infants

An open-label, two-center, randomized study in breastfeeding women compared a copper-containing IUD (Multiload Cu250) with an oral progestin-only contraceptive (lynestrenol 500 mcg). There were no statistically significant differences between groups with regard to infant anthropometric parameters and child health, except a lower incidence of child illness after 6 months in the lynestrenol group.[6]

Three hundred twenty lactating women were randomized to either a copper-containing IUD (Copper T380A; n = 157) or to an IUD containing levonorgestrel (Mirena; n = 163). Follow-up of infants for 1 year found no differences in growth and development or in duration of breastfeeding.[7]

A study compared the performance of a copper-containing IUD (Copper T 380A; n = 122), progesterone vaginal rings (n = 187), an oral progestin-only contraceptive (lynestrenol 500 mcg; n = 117), and levonorgestrel implants (Norplant; n = 120) in lactating women. After the first year of use, none of the methods affected the rate of infant growth.[8]

In a multicenter study, women who received a (Copper T 380A; N = 734) intrauterine device were compared to women who received a vaginal ring that released about 10 mg daily of progesterone (N = 802) beginning at day 29 to 63 postpartum. After the first year of use, no significant differences were found in the health and weight gain of the infants in the 2 groups.[9]

## Effects on Lactation and Breastmilk

A study compared prolactin serum concentrations in 40 women using a copper-containing intrauterine device (Copper T, Copper 7 or Soonawalla Y) to those of 20 women who were using condoms or practicing abstinence. Serum prolactin levels were higher in lactating women using a copper IUD (n = 7) than in lactating controls (n = 5) and in nonlactating women using a copper IUD (n = 33) than in lactating controls (n = 15). The authors also noted that they had seen 12 women with galactorrhea who were using a copper IUD, although they did not establish a cause-and-effect relationship. None of the study patients had galactorrhea.[10]

A 30-year-old woman had been using a copper IUD (Gravigard) for 19 months when she noted spontaneous galactorrhea, mostly from the left breast. Thyroid function and basal serum prolactin levels were normal and a brain tumor was ruled out. Three months later, the IUD was removed and milk production stopped 7 months after removal. The patient used no IUD for 3 months, then the copper IUD was replaced. Mild spontaneous lactation began 3 days after IUD placement, mainly from the right breast. The patient was taking no medications that would cause galactorrhea. The galactorrhea was probably caused by the IUD.[11]

Eighty-four women had 6 subdermal implants containing 100 mg each of progesterone inserted between days 30 to 35 postpartum as a contraceptive. Compared to women who received either a placebo or a Copper T intrauterine device, no difference was found in the breastfeeding rates during the first 9 months postpartum. At 1 year postpartum, more women in the Copper T group were breastfeeding than in the progesterone or placebo groups.[12]

An open-label, two-center, randomized study in breastfeeding women compared a copper-containing IUD (Multiload Cu250) with an oral progestin-only contraceptive (lynestrenol 500 mcg). There were no statistically significant differences between groups with regard to the amount of milk production or number of daily breastfeedings.[6]

A study compared the performance of a copper-containing IUD (Copper T 380A; n = 122), progesterone vaginal rings (n = 187), an oral progestin-only contraceptive (lynestrenol 500 mcg; n = 117), and levonorgestrel implants (Norplant; n = 120) in lactating women. After the first year of use, none of the methods affected breastfeeding performance. Users of the progestin-only methods experienced a period of lactational amenorrhea 4 to 5 months longer than did users of Copper T or untreated women.[8] In a multicenter study, women who received a (Copper T 380A; N = 734) intrauterine device were compared to women who received a vaginal ring that released about 10 mg daily of progesterone (N = 802) beginning at day 29 to 63 postpartum. No differences were found in the rate of breastfeeding between the 2 groups over the first year postpartum.[9]

A nonblinded, nonrandomized study compared a copper-containing IUD (Multiload Cu375; n = 40) to oral desogestrel 75 mcg daily (n = 42) begun 28 to 56 days postpartum for contraception. During the 7-month trial

period, 1 woman dropped out of the trial because of diminished lactation compared with none in the IUD group. At the end of the first and fourth treatment cycle, there were no differences in the amount of milk produced between the desogestrel and IUD groups. No differences in triglyceride, protein or lactose content of milk were found at the end of 1, 4, and 7 cycles of therapy.[13]

## Alternate Drugs to Consider

Etonogestrel, Oral Levonorgestrel, Intrauterine Levonorgestrel, Levonorgestrel Implant, Medroxyprogesterone Acetate; Norethindrone; Progesterone

## References

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## Substance Identification

### Substance Name

Intrauterine Copper Contraceptive

### Drug Class

Breast Feeding

Lactation

Intrauterine Devices, Copper

Contraceptive Devices

Contraceptive Agents, Female

Contraceptives, Postcoital