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# Tocilizumab

Revised: February 17, 2020.

CASRN: 375823-41-9

## Drug Levels and Effects

### Summary of Use during Lactation

Little information is available on the clinical use of tocilizumab during breastfeeding. Only small amounts of tocilizumab were detected in breastmilk after intravenous doses in several mothers, and a few mothers have breastfed their infants with undetectable infant serum levels and no reported adverse effects. If tocilizumab is required by the mother, it is not a reason to discontinue breastfeeding.[1] Until more data become available, tocilizumab should be used with caution during breastfeeding, especially while nursing a newborn or preterm infant.

Tocilizumab is a human immunoglobulin G1 (IgG1) kappa antibody. Holder pasteurization (62.5 degrees C for 30 minutes) decreases the concentration of endogenous immunoglobulin G by up to 79%.[2-4] A study of 67 colostrum samples that underwent Holder pasteurization found that IgG amounts decreased by 34 to 40%. Specific IgG subclasses decreased by different amounts, with IgG1 activity decreasing by about 37%.[5] None of the studies measured IgG activity.

### Drug Levels

*Maternal Levels.* A woman with rheumatoid arthritis resumed tocilizumab at 5 weeks postpartum at a dose of 400 mg intravenously every month. Breastmilk concentration were determined at 13, 18 and 22 weeks postpartum. The highest tocilizumab concentrations in milk occurred 3 days after the injection and was 68.2 mcg/L. The lowest concentration was <0.2 mcg/L at 34 days after the dose. Another mother resumed monthly tocilizumab 400 mg intravenously 9 days postpartum. Breastmilk concentration were measured after the doses at 35 and 49 weeks postpartum. The highest concentrations occurred 3 days after the injection at 148.2 mcg/L and fell to 9 mcg/L after 28 days.[6]

A woman was treated for adult onset Still's disease with tocilizumab 400 mg every 4 weeks, prednisolone 5 mg daily and tacrolimus 2 mg daily throughout pregnancy. The tocilizumab concentration in milk at 5 days postpartum (32 days after the previous dose) was 3.4 mcg/L. Another dose was given at 6 days postpartum. The milk level about 19 hours later was 55.4 mcg/L; at 2.8 days after the dose the milk level was 215 mcg/L; at 18 days after the dose, the milk level was 70.4 mcg/L; at 28 days after the dose and before the next dose, the level was 3.8

mcg/L. Another dose was given on day 28. At about an hour after this dose the milk level was 48 mcg/L; 3 days later, the milk level was 205 mcg/L; at 11 days after the dose, the milk level was 127 mcg/L; at 17 days after the dose it was 65 mcg/L, and at 28 days after the dose it was 4.9 mcg/L.[7]

In addition to the two patients reported above, the same authors measured trough tocilizumab concentrations in two other women with rheumatoid arthritis receiving the drug 400 mg every 4 weeks, using dried milk spots. One mother had a trough milk level of 12.2 mcg/L after 10 doses of tocilizumab and another had a trough milk level of 4.9 mcg/L after one dose.[8]

*Infant Levels.* A woman was treated for adult onset Still's disease with tocilizumab 400 mg every 4 weeks, prednisolone 5 mg daily and tacrolimus 2 mg daily throughout pregnancy. She breastfed almost exclusively postpartum while tocilizumab was continued. The concentration in the umbilical cord blood was 683 mcg/L at delivery 28 days after the previous tocilizumab dose. Even though the infant was almost completely breastfed, the tocilizumab concentration in the infant's serum 5 days after delivery decreased to 177 mcg/L. By 4 weeks after delivery, tocilizumab was not detectable in the infant's serum. Another dose of tocilizumab was give at 28 days postpartum. At 55 days postpartum, tocilizumab was not detected in the infant's serum.[6]

## Effects in Breastfed Infants

A pregnancy registry in Japan reported that two mothers resumed tocilizumab therapy while nursing their infants. No adverse events were reported in the infants, but details regarding extent of nursing, infant age, etc. are lacking.[9]

Two women in Japan were treated with intravenous tocilizumab 400 mg monthly for rheumatoid arthritis while they reportedly breastfed their infants exclusively for 9 and 11 months, respectively. Neither infant experienced any adverse effects from the drugs and received all routine immunizations, including BCG without any adverse consequences.[6] It is possible that these two mothers are the same as those reported above.

Three women with rheumatoid arthritis became pregnant while taking tocilizumab. The drug was stopped for the remainder of the pregnancy, but resumed (dose not stated) postpartum. They breastfed their infants (extent not stated). No infants had any adverse effects during the first year.[9]

A woman was treated for adult onset Still's disease with tocilizumab 400 mg every 4 weeks, prednisolone 5 mg daily and tacrolimus 2 mg daily throughout pregnancy and postpartum. She breastfed almost exclusively postpartum while tocilizumab was continued every 4 weeks. Her infant developed no serious infections and demonstrated no developmental delay as of 6 months of age. The infant's routine childhood vaccinations included Haemophilus influenzae type b conjugate, hepatitis B, diphtheria, pertussis, tetanus, inactivated polio, and 13-valent pneumococcal polysaccharide vaccines. No live vaccines were given for the first 6 months postpartum. No adverse effects such as serious infections or immune reactions were seen.[7]

## Effects on Lactation and Breastmilk

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

## References

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# Substance Identification

## Substance Name

Tocilizumab

## CAS Registry Number

375823-41-9

## Drug Class

Breast Feeding

Lactation

Antibodies, Monoclonal, Humanized

Antirheumatic Agents