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NLM Citation: Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Library of Medicine (US); 2006-. Immune Globulin. [Updated 2020 Feb 17].
Bookshelf URL: https://www.ncbi.nlm.nih.gov/books/

Immune Globulin

Revised: February 17, 2020.

CASRN: 9007-83-4

Drug Levels and Effects

Summary of Use during Lactation

Immune globulin G (IgG) is a normal component of breastmilk. Data from 2 mothers indicate that IgG concentrations in milk are normal or higher and IgM levels in milk are normal or lower during intravenous immunoglobulin (IVIG) therapy. The antibacterial activity of milk in these women was normal. There appears to be an emerging consensus that intravenous immune globulin is the treatment of choice for postpartum mothers with multiple sclerosis who are breastfeeding,[1-4] although one retrospective study failed to find a decrease in relapse rate among mothers who received IgG postpartum.[5]

Holder pasteurization (62.5 degrees C for 30 minutes) decreases the concentration of endogenous immunoglobulin G by up to 79%.[6,7] A study of 67 colostrum samples that underwent Holder pasteurization found that IgG amounts decreased by 34 to 40%.[8] None of the studies measured IgG activity.

Drug Levels

Maternal Levels. Colostrum (3 days postpartum) and milk (7 days postpartum) samples from 2 mothers who were receiving IVIG for the treatment of common variable immunodeficiency were studied. One mother was receiving 400 to 500 mg/kg of IVIG monthly and the other received 600 to 700 mg/kg of IVIG monthly. The time of the last dose before sample collection was not reported. IgG concentrations were normal in the first mother's colostrum and milk and higher than normal in the colostrum of the second mother. IgM levels were normal in the colostrum and milk first mother and low in the second. The colostrum and milk of both mothers strongly inhibited adhesion of enteropathogenic *Escherichia coli in vitro.*[9]

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

Effects in Breastfed Infants

In a retrospective study of 108 women with relapsing-remitting multiple sclerosis, 69 received IVIG postpartum. Those who received IVIG received either 0.4 g/kg daily for 5 days plus additional doses of 0.4 g/kg at 6 and 12 weeks postpartum (n = 41), or IVIG 0.4 g/kg daily for 5 days during the first 6 to 8 weeks of pregnancy, then 0.4 g/kg every 6 weeks until 12 weeks postpartum. Seventy-three percent of the 108 infants were breastfed until 3 to

12 weeks postpartum. No serious adverse event occurred in any of the infants and the mothers who breastfed had outcomes as good as those who did not.[10]

A case series reported 43 women with multiple sclerosis who received 60 grams of IVIG within 3 days of delivery and 10 grams monthly. All of the women breastfed their infants for at least 4 weeks. The only adverse effect reported in infants was a transient rash one day after a maternal dose of IVIG which was possibly caused by the IVIG. The relapse rate was lower than with historical controls who did not receive IVIG.[11]

A European double-blind, randomized trial compared two IVIG regimens in 168 postpartum mothers with multiple sclerosis to observe the relapse rate. One group received 150 mg/kg within 24 hours of delivery and monthly for 6 months. The other group received 450 mg/kg within 24 hours of delivery, 300 mg/kg on day 2 and 150 mg/kg on day 3 postpartum followed by monthly doses of 150 mg/kg until 6 months postpartum. More mothers who breastfed for 3 months or longer were relapse free during the study than those who did not breastfed or who breastfed less than 3 months. In all, 91 mothers breastfed for 3 months or longer and 48 mothers breastfed for less than 3 months. No mention was made of adverse effects in breastfed infants.[12]

A woman with pemphigoid gestationis was treated with several courses of intravenous immune globulin 2 grams/kg over 3 days during pregnancy as well as at 4, 9 and 13 weeks postpartum. She was also receiving prednisolone in a dosage tapering from 0.7 mg/kg daily to 1 mg daily. She breastfed her infant (extent not stated) for 3 months with no problems noted.[13]

In a study comparing the timing of intravenous immune globulin on the relapse of relapsing-remitting multiple sclerosis, 24 patients were treated with intravenous immune globulin starting in the first 24 hours after delivery and during lactation. The authors concluded that intravenous immune globulin is effective in reducing the frequency of postpartum-related relapses. No adverse effects were noted. Further details were not provided in the published abstract.[14]

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Effects on Lactation and Breastmilk

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

Alternate Drugs to Consider

(Multiple Sclerosis) Glatiramer, Interferon Beta, Methylprednisolone

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Substance Identification

Substance Name

Immune Globulin

CAS Registry Number

9007-83-4

Drug Class

Breast Feeding

Lactation

Antibodies

Immunoglobulin G

Immunoglobulins