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St. John's Wort

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CASRN: 68917-49-7

Drug Levels and Effects

Summary of Use during Lactation

St. John's wort (Hypericum perforatum) contains hypericin and hyperforin as well as flavonoids such as quercetin. It is often recommended by midwives for postpartum depression.[1][2] Both hypericin and hyperforin are poorly excreted into breastmilk; no other components have been measured in milk. One study found a slightly increased frequency of colic, drowsiness and lethargy among breastfed infants whose mothers were taking St. John's wort, but none of the effects were severe or required treatment. Most reports have related to breastfeeding older infants, rather than during the first 2 months postpartum when infants are more susceptible to adverse reactions. Conflicting information exists on whether St. John's wort can reduce serum prolactin levels or the maternal milk supply. St. John's wort adversely interacts with many drugs by increasing their metabolism, and it can occasionally cause phototoxicity. Labeling of commercially available products in the United States is often deficient with respect to these known safety issues.[3] Because there is little published experience with St. John's wort during breastfeeding, an alternate drug may be preferred, especially while nursing a newborn or preterm infant.[3]

Dietary supplements do not require extensive pre-marketing approval from the U.S. Food and Drug Administration. Manufacturers are responsible to ensure the safety, but do not need to *prove* the safety and effectiveness of dietary supplements before they are marketed. Dietary supplements may contain multiple ingredients, and differences are often found between labeled and actual ingredients or their amounts. A manufacturer may contract with an independent organization to verify the quality of a product or its ingredients, but that does *not* certify the safety or effectiveness of a product. Because of the above issues, clinical testing results on one product may not be applicable to other products. More detailed information about dietary supplements is available elsewhere on the LactMed Web site.

Drug Levels

Most studies have used Jarsin brand (Lichtwer Pharma AG, Berlin, Germany, marketed as Kira brand in the United States) of St. John's wort which is an 80% methanolic dry extract that contains 0.21% hypericin and 2.5% hyperforin.[4]

Maternal Levels. Hypericin and Hyperforin A postpartum woman with depression began taking St. John's wort (Jarsin brand) 300 mg 3 times daily starting at 5 months postpartum. At 7 months postpartum, 8 breastmilk samples (4 foremilk and 4 hindmilk) were taken over an 18-hour period. Hypericin was undetectable (<0.2 mcg/L) in all samples. In foremilk, hyperforin was undetectable (<0.5 mcg/L) in 2 samples and was 0.58 and 1.01 mcg/L in 2 others. In hindmilk, hyperforin was found in all samples with an average concentration of 5.77 mcg/L. The lowest level of 0.86 mcg/L was at about 2.25 hours after the morning dose, and the highest level of 18.2 mcg/L was about 1.75 hours before the morning dose and 10 hours after the previous nursing.[5]

In a second study by the same group, 5 women who were 10 to 22 weeks postpartum and had been taking St. John's wort (Jarsin brand) 300 mg 3 times daily for at least 4 weeks provided milk samples over an 18-hour period. From a total of 36 fore- and hindmilk samples, the overall average hyperforin concentrations in foremilk and hindmilk were both 3.5 mcg/L (range 0.1 to 31.5 mcg/L). Hypericin was not measured. The average infant dosage was 1.5% (range 0.9 to 2.5%) of the maternal weight-adjusted dosage.[6]

Quercetin Milk samples from 17 nursing mothers on uncontrolled diets were taken at 1, 4 and 13 weeks postpartum at times between 10 am and 1 pm. Average quercetin levels in breastmilk were 48 nmol/L at week 1, 60 nmol/L at week 4 and 51 nmol/L at week 13. Because of the uncontrolled diet and varying sampling times, the range of values among individuals was large.[7]

Quercetin was measured in the milk of 11 mothers after they received an onion soup that contained either 0.8 or 1 mg/kg of quercetin glucosides. A baseline milk sample was obtained after a 5-day low-quercetin diet, and 7 milk samples were obtained over the 48 hours following soup ingestion. Baseline total (from conjugated and unconjugated) quercetin in breastmilk averaged 45 nmol/L. An average peak milk quercetin level of 68 nmol/L was attained at an average of 11.9 hours after the soup meal. The average half-life of quercetin in breastmilk was 50.3 hours.[8] *Infant Levels. Hypericin and Hyperforin* A postpartum woman with depression began taking St. John's wort (Jarsin brand) 300 mg 3 times daily starting at 5 months postpartum. At 7 months postpartum, her breastfed (extent not stated) infant had a blood sample taken 8 hours after a dose. Neither hypericin (<0.2 mcg/L) nor hyperforin (<0.5 mcg/L) were detectable in the infant's plasma.[5]

Two infants were exclusively breastfed by mothers who had been taking St. John's wort (Jarsin brand) 300 mg 3 times daily for at least 4 weeks. Infant blood samples were taken when the infants were 10 and 22 weeks old, respectively. Both of their plasma hyperforin concentrations were at the limit of detection of 0.1 mcg/L.[6]

Effects in Breastfed Infants

A woman took St. John's wort 300 mg daily (product details not specified) during pregnancy, discontinued it at term and then reinstituted it at 20 days postpartum. Her breastfed (extent not stated) infant was found to have a normal behavioral assessment on days 4 and 33.[9]

A postpartum woman with depression began taking St. John's wort (Jarsin brand) 300 mg 3 times daily starting at 5 months postpartum. At 7 months postpartum, no side effects were noted in her breastfed (extent not stated) infant and the infant's developmental score was normal.[5]

A matched cohort study compared 33 women who reported that they had taken St. John's wort during breastfeeding to 2 control groups who were either disease matched (primarily depression), or age and parity matched. The duration of breastfeeding was similar across all groups and ranged from a mean of 10.8 to 12.1 months. Formula was introduced on average between 4.3 and 6.3 months, with no statistical differences between groups. The brands of St. John's wort used were not reported. The average daily dosage was 705 mg (range 225 to 2150 mg daily), and the average duration of therapy was 1.5 months, beginning at 4.2 months (range 0 to 11 months) postpartum. The average duration of St. John's wort exposure in the infants via breastmilk was 2.1 months. Mothers who were taking St. John's wort more frequently reported infant colic (n = 2), drowsiness (n = 2) and lethargy (n = 1) than mothers in the other groups in which only 1 case of colic was reported in each

group. The difference was statistically significant between the treatment and disease-matched control groups. Between these 2 groups, there were no differences in the proportion of women taking conventional antidepressants overall or among mothers of affected infants, or in the dosages the mothers took. None of the affected infants required specific medical treatment and there was no difference in weight gain between subsets of the groups in whom weight could be obtained between 15 and 16 months of age.[10]

Five women who were 10 to 22 weeks postpartum had been taking St. John's wort (Jarsin brand) 300 mg 3 times daily for at least 4 weeks and exclusively breastfeeding their infants. Mothers were asked if they had noticed any gastrointestinal symptoms, lethargy, rashes, photosensitivity, or changes in sleep pattern. None of the mothers observed any adverse effects or unusual behavior in their infants, and the infants grew normally during maternal therapy.[6]

Effects on Lactation and Breastmilk

In a matched cohort study of 33 women who reported that they had taken St. John's wort during breastfeeding (described in more detail above in "Reported Side Effects In Breastfed Infants"), no evidence was found of lower milk production among mothers taking St. John's wort during breastfeeding.[10]

Thirty-six women with mild premenstrual syndrome received St. John's wort 450 mg twice daily as coated tablets (Jarsin brand) or placebo for two menstrual cycles. Serum prolactin levels of the women randomized to active treatment (n = 19) were not statistically different from those of the women who received placebo (n = 17) in either the follicular or luteal phase of their menstrual cycles.[11]

Studies in healthy volunteer males (n = 12) given single doses of 2700 mg of St. John's wort (Jarsin brand) had a drop in serum prolactin that was statistically significant between 150 and 210 minutes after administration.[12]

The prolactin level in a mother with established lactation may not affect her ability to breastfeed.

Alternate Drugs to Consider

Nortriptyline, Paroxetine, Sertraline

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Substance Identification

Substance Name

St. John's Wort

Scientific Name

Hypericum perforatum

CAS Registry Number

68917-49-7

Drug Class

Breast Feeding

Lactation

Anti-Anxiety Agents

Antidepressive Agents

Complementary Therapies

Phytotherapy

Plants, Medicinal