



Lanolin

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Drug Levels and Effects

Summary of Use during Lactation

Lanolin is a yellow fat obtained from sheep's wool. It has traditionally been used topically to treat sore, cracked nipples during breastfeeding. Highly purified lanolin products (e.g., HPA lanolin, Lansinoh) have the pesticide and detergent residues removed and the natural free alcohols reduced to below 1.5% to improve safety and reduce the allergic potential.[1] However, even highly-purified lanolin should be avoided in patients with a known allergy to wool.

Lanolin appears to be effective for the prevention and treatment of nipple pain during breastfeeding,[2] but not as a preventative initiated before delivery.[3] Studies, most of which used Lansinoh, have not found lanolin to be consistently different in efficacy from application of breastmilk, hydrogel dressings, peppermint gel, aloe vera or warm compresses.[4-11] A meta-analysis concluded that application of nothing or breastmilk may be superior to lanolin, but good studies are lacking.[12] One small nonblinded study found olive oil to be superior to lanolin for prevention of sore nipples,[13] and another small, single-blinded study found that lanolin application to painful nipples did not decrease nipple pain compared to usual care.[14] A study in women with nipple trauma and pain comparing application of lanolin after each feeding to application of breastmilk plus a nipple shell found that the breastmilk and shell were more effective than lanolin.[15] A randomized study comparing highly purified lanolin (Lansinoh) to expressed breastmilk in 180 mothers, found lanolin to be superior to breastmilk over a 7-day period in reducing pain and the nipple trauma score. Two studies of moderate quality found aloe vera and purslane to be more effective than lanolin in treating sore nipples during breastfeeding.[16]

A study comparing the various highly purified lanolin products found that HPA lanolin (Lansinoh Laboratories Inc.), Purelan (Medela AG) and two lanolin EU monograph compliant ingredients (Pharmalan PH EU-SO-(RB) and Corona-8 SO-(RB) (Croda, Goole, UK). The EU monograph compliant ingredients had the lowest level of contaminants. HPA lanolin contained an extremely low level of free lanolin alcohols, indicating a high level of purification, which was fourfold lower than Purelan. The HPA lanolin did not contain any detectable pesticide residues. Purelan contained a number of pesticide residues (diazinon, piperonyl butoxide, triflumuron); however, the levels were low and within the permitted limits.[17]

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Drug Levels

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

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

Effects in Breastfed Infants

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

Effects on Lactation and Breastmilk

In a randomized, double-blind trial, lanolin was compared to an all-purpose nipple ointment containing mupirocin 1%, betamethasone 0.05%, and miconazole 2% for painful nipples while nursing in the first 2 weeks postpartum. The two treatments were equally effective in reducing nipple pain, nipple healing time, breastfeeding duration, breastfeeding exclusivity rate, mastitis and nipple symptoms, side effects or maternal satisfaction with treatment.[18]

A randomized trial in nursing women with damaged, painful nipples compared lanolin application to usual care, which was a variable mix of education or assistance by health professional, application of warm or cool compresses, analgesics, air drying the nipples or the use of breast shields. A blinded observer assessed healing via telephone calls to the mothers several times after randomization. No differences were found in nipple pain between the groups 4 to 7 days after randomization. No difference was found in breastfeeding self-efficacy at 4 days post-randomization or in the breastfeeding rates of the two groups at 4 and 12 weeks postpartum. Patient satisfaction with care was higher in the women who received lanolin.[14]

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Substance Identification

Substance Name

Lanolin

CAS Registry Number

8006-54-0

Drug Class

Breast Feeding

Lactation

Milk, Human

Cosmetics

Pharmaceutic Aids

Waxes