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plaques or 5% ( $\pm$  2.6%, SD) when applied to normal skin, and much of the absorbed active is converted to inactive metabolites within 24 hours of application.

Vitamin D and its metabolites are transported in the blood, bound to specific plasma proteins. The active form of the vitamin, 1,25-dihydroxy vitamin D<sub>3</sub> (calcitriol), is known to be recycled via the liver and excreted in the bile. Calcipotriene metabolism following systemic uptake is rapid, and occurs via a similar pathway to the natural hormone. The primary metabolites are much less potent than the parent compound.

There is evidence that maternal 1,25-dihydroxy vitamin D<sub>3</sub> (calcitriol) may enter the fetal circulation, but it is not known whether it is excreted in human milk. The systemic disposition of calcipotriene is expected to be similar to that of the naturally occurring vitamin.

## **CLINICAL STUDIES**

Adequate and well-controlled trials of patients treated with Dovonex ointment have demonstrated improvement usually beginning after two weeks of therapy. This improvement continued in patients using Dovonex once daily and twice daily. After 8 weeks of once daily Dovonex, 56.7% of patients showed at least marked improvements (6.4% showed complete clearing). After 8 weeks of twice daily Dovonex, 70.0% of patients showed at least marked improvement (11.3% showed complete clearing).

Subtracting percentages of patients using placebo (vehicle only) from percentages of patients using Dovonex who had at least marked improvements after 8 weeks yields 39.9% for once daily and 49.6% for twice daily. This adjustment for placebo effect indicates that what might appear to be differences between once and twice daily use may reflect differences in the studies independent from the frequency of dosing. Although there was a numerical difference in comparison across studies, twice daily dosing has not been shown to be superior in efficacy to once daily dosing.

Over 400 patients have been treated in open label clinical studies of Dovonex for periods of up to one year. In half of these studies, patients who previously had not responded well to Dovonex were excluded. The adverse events in these extended studies included skin irritation in approximately 25% of patients and worsening of psoriasis in approximately 10% of patients. In one of these open label studies, half of the patients no longer required Dovonex by 16 weeks of treatment, because of satisfactory therapeutic results.

## **INDICATIONS AND USAGE**

Dovonex (calcipotriene ointment), 0.005%, is indicated for the treatment of plaque psoriasis in adults. The safety and effectiveness of topical calcipotriene in dermatoses other than psoriasis have not been established.

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## **CONTRAINDICATIONS**

Dovonex is contraindicated in those patients with a history of hypersensitivity to any of the components of the preparation. It should not be used by patients with demonstrated hypercalcemia or evidence of vitamin D toxicity. Dovonex should not be used on the face.

## **PRECAUTIONS**

### **General**

Use of Dovonex may cause irritation of lesions and surrounding uninvolved skin. If irritation develops, Dovonex should be discontinued.

For external use only. Keep out of the reach of children. Always wash hands thoroughly after use.

Transient, rapidly reversible elevation of serum calcium has occurred with use of Dovonex. If elevation in serum calcium outside the normal range should occur, discontinue treatment until normal calcium levels are restored.

### **Information for Patients**

Patients using Dovonex should receive the following information and instructions:

1. This medication is to be used as directed by the physician. It is for external use only. Avoid contact with the face or eyes. As with any topical medication, patients should wash hands after application.
2. This medication should not be used for any disorder other than that for which it was prescribed.
3. Patients should report to their physician any signs of local adverse reactions.
4. Patients that apply Dovonex to exposed portions of the body should avoid excessive exposure to either natural or artificial sunlight (including tanning booths, sun lamps, etc.).

### **Carcinogenesis, Mutagenesis, Impairment of Fertility**

The potential of calcipotriene to induce carcinogenesis in standard long-term animal studies (in the absence of ultra-violet radiation (UVR)) has not been evaluated. In a study in which albino hairless mice were exposed to both UVR and topically applied calcipotriene, a reduction in the time required for UVR to induce the formation of skin tumors was observed (statistically significant in males only), suggesting that calcipotriene may enhance the effect of UVR to induce skin tumors. Patients that apply Dovonex to exposed portions of the body should avoid excessive exposure to either natural or artificial sunlight (including tanning booths, sun lamps, etc.). Physicians may wish to limit or avoid use of phototherapy in patients that use Dovonex.

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Calcipotriene did not elicit any mutagenic effects in an Ames mutagenicity assay, a mouse lymphoma TK locus assay, a human lymphocyte chromosome aberration assay, or in a micronucleus assay conducted in mice.

Studies in rats at doses up to 54  $\mu\text{g}/\text{kg}/\text{day}$  (318  $\mu\text{g}/\text{m}^2/\text{day}$ ) of calcipotriene indicated no impairment of fertility or general reproductive performance.

## **Pregnancy**

### *Teratogenic Effects: Pregnancy Category C*

Studies of teratogenicity were done by the oral route where bioavailability is expected to be approximately 40-60% of the administered dose. In rabbits, increased maternal and fetal toxicity were noted at a dosage of 12  $\mu\text{g}/\text{kg}/\text{day}$  (132  $\mu\text{g}/\text{m}^2/\text{day}$ ); a dosage of 36  $\mu\text{g}/\text{kg}/\text{day}$  (396  $\mu\text{g}/\text{m}^2/\text{day}$ ) resulted in a significant increase in the incidence of incomplete ossification of the pubic bones and forelimb phalanges of fetuses. In a rat study, a dosage of 54  $\mu\text{g}/\text{kg}/\text{day}$  (318  $\mu\text{g}/\text{m}^2/\text{day}$ ) resulted in a significantly increased incidence of skeletal abnormalities (enlarged fontanelles and extra ribs). The enlarged fontanelles are most likely due to calcipotriene's effect upon calcium metabolism. The estimated maternal and fetal no-effect exposure levels in the rat (43.2  $\mu\text{g}/\text{m}^2/\text{day}$ ) and rabbit (17.6  $\mu\text{g}/\text{m}^2/\text{day}$ ) studies are approximately equal to the expected human systemic exposure level (18.5  $\mu\text{g}/\text{m}^2/\text{day}$ ) from dermal application. There are no adequate and well-controlled studies in pregnant women. Therefore, Dovonex ointment should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

## **Nursing Mothers**

It is not known whether calcipotriene is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Dovonex (calcipotriene ointment), 0.005% is administered to a nursing woman.

## **Pediatric Use**

Safety and effectiveness of Dovonex in pediatric patients have not been established. Because of a higher ratio of skin surface area to body mass, pediatric patients are at greater risk than adults of systemic adverse effects when they are treated with topical medication.

## **Geriatric Use**

Of the total number of patients in clinical studies of calcipotriene ointment, approximately 12% were 65 or older, while approximately 4% were 75 and over. The results of an analysis of severity of skin-

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related adverse events showed a statistically significant difference for subjects over 65 years (more severe) compared to those under 65 years (less severe).

## ADVERSE REACTIONS

In controlled clinical trials, the most frequent adverse reactions reported for Dovonex were burning, itching and skin irritation, which occurred in approximately 10-15% of patients. Erythema, dry skin, peeling, rash, dermatitis, worsening of psoriasis including development of facial/scalp psoriasis were reported in 1 to 10% of patients. Other experiences reported in less than 1% of patients included skin atrophy, hyperpigmentation, hypercalcemia, and folliculitis. Once daily dosing has not been shown to be superior in safety to twice daily dosing.

## OVERDOSAGE

Topically applied Dovonex can be absorbed in sufficient amounts to produce systemic effects. Elevated serum calcium has been observed with excessive use of Dovonex ointment.

## DOSAGE AND ADMINISTRATION

Apply a thin layer of Dovonex ointment once or twice daily and rub in gently and completely.

## HOW SUPPLIED

Dovonex<sup>®</sup> (calcipotriene ointment), 0.005% is available in:

60 gram aluminum tubes (NDC 0072-2540-06).

120 gram aluminum tubes (NDC 0072-2540-12).

## STORAGE

Store at controlled room temperature 15° C-25° C (59° F-77° F). Do not freeze.



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 Bristol-Myers Squibb Company

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