

day (87X MRHD based on AUC comparisons), the highest dose evaluated in this study. In the absence of maternal toxicity, bent limb bones were noted in the F1 fetuses at a dose of 6 mg/kg/day (87X MRHD based on AUC comparisons). This fetal effect was also noted in the oral rat embryofetal development study conducted with imiquimod. No treatment related effects on teratogenicity were noted at 3 mg/kg/day (41X MRHD based on AUC comparisons).

There are no adequate and well-controlled studies in pregnant women. Imiquimod cream should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

8.3 Nursing Mothers

It is not known whether imiquimod is excreted in human milk following use of imiquimod cream. Because many drugs are excreted in human milk, caution should be exercised when imiquimod cream is administered to nursing women.

8.4 Pediatric Use

AK is not a condition generally seen within the pediatric population. The safety and efficacy of imiquimod cream for AK in patients less than 18 years of age have not been established. Safety and efficacy in patients with external genital/perianal warts below the age of 12 years have not been established.

Imiquimod cream was evaluated in two randomized, vehicle-controlled, double-blind trials involving 702 pediatric subjects with molluscum contagiosum (MC) (470 exposed to imiquimod; median age 5 years, range 2 to 12 years). Subjects applied imiquimod cream or vehicle 3 times weekly for up to 16 weeks. Complete clearance (no MC lesions) was assessed at Week 18. In Study 1, the complete clearance rate was 24% (52/217) in the imiquimod cream group compared with 26% (28/106) in the vehicle group. In Study 2, the clearance rates were 24% (60/253) in the imiquimod cream group compared with 28% (35/126) in the vehicle group. These studies failed to demonstrate efficacy.

Similar to the studies conducted in adults, the most frequently reported adverse reaction from 2 studies in children with molluscum contagiosum was application site reaction. Adverse events which occurred more frequently in imiquimod-treated subjects compared with vehicle-treated subjects generally resembled those seen in studies in indications approved for adults and also included otitis media (5% imiquimod vs. 3% vehicle) and conjunctivitis (3% imiquimod vs. 2% vehicle).

Erythema was the most frequently reported local skin reaction. Severe local skin reactions reported by imiquimod-treated subjects in the pediatric studies included erythema (28%), edema (8%), scabbing/crusting (5%), flaking/scaling (5%), erosion (2%) and weeping/exudate (2%). Systemic absorption of imiquimod across the affected skin of 22 subjects aged 2 to 12 years with extensive MC involving at least 10% of the total body surface area was observed after single and multiple doses at a dosing frequency of 3 applications per week for 4 weeks. The investigator determined the dose applied, either 1, 2 or 3 packets per dose, based on the size of the treatment area and the subject's weight. The overall median peak serum drug concentrations at the end of week 4 was between 0.26 and 1.06 ng/mL except in a 2-year old female who was administered 2 packets of study drug per dose, had a C_{max} of 9.85 ng/mL after multiple dosing. Children aged 2 to 5 years received doses of 12.5 mg (one packet) or 25 mg (two packets) of imiquimod and had median multiple-dose peak serum drug levels of approximately 0.2 or 0.5 ng/mL, respectively. Children aged 6 to 12 years received doses of 12.5 mg, 25 mg, or 37.5 mg (three packets) and had median multiple dose serum drug levels of approximately 0.1, 0.15, or 0.3 ng/mL, respectively. Among the 20 subjects with evaluable laboratory assessments, the median WBC count decreased by $1.4 \times 10^9/L$ and the median absolute neutrophil count decreased by $1.42 \times 10^9/L$.

8.5 Geriatric Use

Of the 215 subjects treated with imiquimod cream in the AK clinical studies, 127 subjects (59%) were 65 years and older, while 60 subjects (28%) were 75 years and older. No overall differences in safety or effectiveness were observed between these subjects and younger subjects. No other clinical experience has identified differences in responses between the elderly and younger subjects, but greater sensitivity of some older individuals cannot be ruled out.

10 OVERDOSAGE

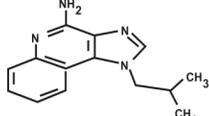
Topical overdosing of imiquimod cream could result in an increased incidence of severe local skin reactions and may increase the risk for systemic reactions.

The most clinically serious adverse event reported following multiple oral imiquimod doses of >200 mg (equivalent to imiquimod content of >16 packets) was hypotension, which resolved following oral intravenous fluid administration.

11 DESCRIPTION

Imiquimod cream, 5% is an immune response modifier for topical administration. Each gram contains 50 mg of imiquimod in an off-white oil-in-water emulsifying cream base consisting of isotretinoin acid, cetyl alcohol, steryl alcohol, white petrolatum, polysorbate 60, sorbitan monostearate, glycerin, xanthan gum, purified water, benzyl alcohol, methylparaben and propylparaben.

Chemically, imiquimod is 1-(2-methylpropyl)-1H-imidazo [4, 5-c] quinolin-4-amine. Imiquimod has a molecular formula of $C_{14}H_{16}N_4$ and a molecular weight of 240.3. Its structural formula is:



12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

The mechanism of action of imiquimod cream in treating AK is unknown.

12.2 Pharmacodynamics

Actinic Keratosis

In a study of 18 subjects with AK comparing imiquimod cream to vehicle, increases from baseline in week 2 biomarker levels were reported for CD3, CD4, CD8, CD11c and CD68 for imiquimod cream treated subjects; however, the clinical relevance of these findings is unknown.

External Genital Warts

Imiquimod has no direct antiviral activity in cell culture. A study in 22 subjects with genital/perianal warts comparing imiquimod cream and vehicle shows that imiquimod cream induces mRNA encoding cytokines including interferon- γ at the treatment site. In addition HPV1, 1 mRNA and HPV DNA are significantly decreased following treatment. However, the clinical relevance of these findings is unknown.

12.3 Pharmacokinetics

Systemic absorption of imiquimod across the affected skin of 58 subjects with AK was observed with a dosing frequency of 3 applications per week for 16 weeks. Mean peak serum drug concentrations at the end of week 16 were approximately 0.1, 0.2 and 3.5 ng/mL for the applications to face (12.5 mg imiquimod, 1 single-use packet), scalp (25 mg, 2 packets) and hands/arms (75 mg, 6 packets), respectively.

Amount of imiquimod cream applied	Mean peak serum imiquimod concentration (C_{max})
12.5 mg (1 packet)	0.1 ng/mL
25 mg (2 packets)	0.2 ng/mL
75 mg (6 packets)	3.5 ng/mL

The application surface area was not controlled when more than one packet was used. Dose proportionality was not observed. However it appears that systemic exposure may be more dependent on surface area of application than amount of applied dose. The apparent half-life was approximately 10 times greater with topical dosing than the 2 hour apparent half-life seen following subcutaneous dosing, suggesting prolonged retention of drug in the skin. Mean urinary recoveries of imiquimod and metabolites combined were 0.08 and 0.15% of the applied dose in the group using 75 mg (6 packets) for males and females, respectively following 3 applications per week for 16 weeks.

Systemic absorption of imiquimod was observed across the affected skin of 12 subjects with genital/perianal warts, with an average dose of 4.6 mg. Mean peak drug concentration of approximately 0.4 ng/mL was seen during the study. Mean urinary recoveries of imiquimod and metabolites combined over the whole course of treatment, expressed as percent of the estimated applied dose, were 0.11 and 2.41% in the males and females, respectively.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

In an oral (gavage) rat carcinogenicity study, imiquimod was administered to Wistar rats on a 2X/week (up to 6 mg/kg/day) or daily (8 mg/kg/day) dosing schedule for 24 months. No treatment related tumors were noted in the oral rat carcinogenicity study up to the highest doses tested in this study of 6 mg/kg administered 2X/week in female rats (87X MRHD based on weekly AUC comparisons), 4 mg/kg administered 2X/week in male rats (75X MRHD based on weekly AUC comparisons) or 3 mg/kg administered 7X/week to male and female rats (15X MRHD based on weekly AUC comparisons).

In a dermal mouse carcinogenicity study, imiquimod cream (up to 5 mg/kg/application imiquimod or 0.3% imiquimod cream) was applied to the backs of mice 3X/week for 24 months. A statistically significant increase in the incidence of liver adenomas and carcinomas was noted in high dose male mice compared to control male mice (25X MRHD based on weekly AUC comparisons). An increased number of skin papillomas was observed in vehicle cream control group animals at the treated site only. The quantitative composition of the vehicle cream used in the dermal mouse carcinogenicity study is the same as the vehicle cream used for imiquimod cream, minus the active moiety (imiquimod).

In a 52-week dermal photo-carcinogenicity study, the median time to onset of skin tumor formation was decreased in hairless mice following chronic topical dosing (3X/week; 40 weeks of treatment followed by 12 weeks of observation) with concurrent exposure to UV radiation (5 days per week) with the imiquimod cream vehicle alone. No additional effect on tumor development beyond the vehicle effect was noted with the addition of the active ingredient, imiquimod, to the vehicle cream.

Imiquimod revealed no evidence of mutagenic or clastogenic potential based on the results of *in vitro* genotoxicity tests (Ames assay, mouse lymphoma L5178Y assay, Chinese hamster ovary cell chromosome aberration assay, human lymphocyte chromosome aberration assay and SHE cell transformation assay) and three *in vivo* genotoxicity tests (rat and hamster bone marrow cytogenetics assay and a mouse dominant lethal test).

Daily oral administration of imiquimod to rats, throughout mating, gestation, parturition and lactation, demonstrated no effects on growth, fertility or reproduction, at doses up to 87X MRHD based on AUC comparisons.

14 CLINICAL STUDIES

14.1 Actinic Keratosis

In two double-blind, vehicle-controlled clinical studies, 436 subjects with AK were randomized to treatment with either imiquimod cream or vehicle cream 2 times per week for 16 weeks. The studies enrolled subjects with 4 to 8 clinically typical, visible, discrete, nonhyperkeratotic, nonhypertrophic AK lesions within a 25 cm² contiguous treatment area on either the face or scalp. The 25 cm² contiguous treatment area could be of any dimensions e.g., 5 cm x 5 cm, 3 cm by 8.3 cm, 2 cm by 12.5 cm. Study subjects ranged from 37 to 88 years of age (median 66 years) and 55% had Fitzpatrick skin type I or II. All imiquimod-treated subjects were Caucasians.

On a scheduled dosing day, the study cream was applied to the entire treatment area prior to normal sleeping hours and left on for approximately 8 hours. Twice weekly dosing was continued for a total of 16 weeks. The clinical response of each subject was evaluated 8 weeks after the last scheduled application of study cream. Efficacy was assessed by the complete clearance rate, defined as the proportion of subjects at the 8-week post-treatment visit with no (zero) clinically visible AK lesions in the treatment area. Complete clearance included clearance of all baseline lesions, as well as any new or sub-clinical AK lesions which appeared during therapy.

Complete and partial clearance rates are shown in the table below. The partial clearance rate was defined as the percentage of subjects in whom 75% or more baseline AK lesions were cleared.

Table 7: Clearance Rates (AK)/Complete Clearance Rates (100% AK Lesions Cleared)

Study	Imiquimod cream	Vehicle
Study AK1	46% (49/107)	3% (3/110)
Study AK2	44% (48/108)	4% (4/111)

Partial and Complete Clearance Rates (75% or More Baseline AK Lesions Cleared)

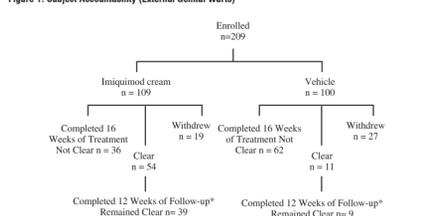
Study	Imiquimod cream	Vehicle
Study AK1	60% (64/107)	10% (11/110)
Study AK2	58% (63/108)	14% (15/111)

Sub-clinical AK lesions may become apparent in the treatment area during treatment with imiquimod cream. During the course of treatment, 48% (103/215) of subjects experienced an increase in AK lesions relative to the number present at baseline within the treatment area. Subjects with an increase in AK lesions had a similar response to those with no increase in AK lesions.

14.3 External Genital Warts

In a double-blind, placebo-controlled clinical study, 209 otherwise healthy subjects 18 years of age and older with genital/perianal warts were treated with imiquimod cream or vehicle control 3 times per week for a maximum of 16 weeks. The median baseline wart area was 69 mm² (range 8 to 5525 mm²). Subject accountability is shown in the figure below.

Figure 1: Subject Accountability (External Genital Warts)



* The other subjects were either lost to follow-up or experienced recurrences. Data on complete clearance are listed in the table below. The median time to complete wart clearance was 10 weeks.

Table 8: Complete Clearance Rates (External Genital Warts) - Study EGWI

Treatment	Subjects with Complete Clearance of Warts	Subjects Without Follow-up	Subjects with Warts Remaining at Week 16
Overall Imiquimod cream (n=109)	54 (50%)	19 (17%)	36 (33%)
Vehicle (n=100)	11 (11%)	27 (27%)	62 (62%)
Females			
Imiquimod cream (n=46)	33 (72%)	5 (11%)	8 (17%)
Vehicle (n=40)	8 (20%)	13 (33%)	19 (48%)
Males			
Imiquimod cream (n=63)	21 (33%)	14 (22%)	28 (44%)
Vehicle (n=60)	3 (5%)	14 (23%)	43 (72%)

16 HOW SUPPLIED/STORAGE AND HANDLING

Imiquimod cream, 5%, is supplied as:

Drug product	Package	NDC
Imiquimod cream, 5%	1 single use packet	64380-773-00
Imiquimod cream, 5%	12 single use packets in a box	64380-773-02
Imiquimod cream, 5%	24 single use packets in a box	64380-773-19

Store at 4 - 25°C (39 - 77°F). Do not freeze.

Keep out of reach of children.

17 PATIENT COUNSELING INFORMATION

See FDA-Approved Patient Labeling

17.1 General Information: All Indications

Imiquimod cream should be used as directed by a physician (see Dosage and Administration (2)). Imiquimod cream is for external use only. Contact with the eyes, lips and nostrils should be avoided (see Indications and Usage (1) and Dosage and Administration (2)).

The treatment area should not be bandaged or otherwise occluded. Partially-used packets should be discarded and not reused. The prescriber should demonstrate the proper application technique to maximize the benefit of imiquimod cream therapy.

It is recommended that patients wash their hands before and after applying imiquimod cream.

17.2 Local Skin Reactions: All Indications

Patients may experience local skin reactions during treatment with imiquimod cream (even with normal dosing). Potential local skin reactions include erythema, edema, vesicles, erosions/ulcerations, weeping/exudate, flaking/scaling/dryness and scabbing/crusting. These reactions can range from mild to severe in intensity and may extend beyond the application site onto the surrounding skin. Patients may also experience application site reactions such as itching and/or burning (see Adverse Reactions (6)).

Local skin reactions may be of such intensity that patients may require rest periods from treatment. Treatment with imiquimod cream can be resumed after the skin reaction has subsided, as determined by the physician. Patients should contact their physician promptly if they experience any sign or symptom at the application site that restricts or prohibits their daily activity or makes continued application of the cream difficult.

Because of local skin reactions, during treatment and until healed, the treatment area is likely to appear noticeably different from normal skin. Localized hyperpigmentation and hyperpigmentation have been reported following use of imiquimod cream. These skin color changes may be permanent in some patients.

17.3 Systemic Reactions: All Indications

Patients may experience flu-like systemic signs and symptoms during treatment with imiquimod cream (even with normal dosing). Systemic signs and symptoms may include malaise, fever, nausea, myalgias and rigors (see Adverse Reactions (6)). An interruption of dosing should be considered.

17.4 Patients Being Treated for Actinic Keratosis (AK)

Dosing is 2 times per week for a full 16 weeks, unless otherwise directed by the physician. However, the treatment period should not be extended beyond 16 weeks due to missed doses or rest periods (see Dosage and Administration (2.1)).

It is recommended that the treatment area be washed with mild soap and water 8 hours following imiquimod cream application.

• Leave the cream on the treated area for the amount of time your healthcare provider tells you. The length of time that Imiquimod Cream is left on the skin is different for each skin condition that Imiquimod Cream is used to treat. Do not take a bath or get the treated area wet during this time.

• After the right amount of time has passed, wash the treated area with mild soap and water.

• If you get Imiquimod Cream in your mouth or in your eyes, rinse well with water right away.

What should I avoid while using Imiquimod Cream?

- Do not cover the treated area with bandages or other closed dressings.
- Do not use sunlamps or tanning beds, and avoid sunlight as much as possible during treatment with Imiquimod Cream. Use sunscreen and wear protective clothing if you go outside during daylight.
- Do not have sexual contact, including genital, anal, or oral sex when Imiquimod Cream is on your genital or the skin around your anus. Imiquimod Cream may weaken condoms and vaginal diaphragms. This means they may not work as well to prevent pregnancy.

What are the possible side effects of Imiquimod Cream?

Imiquimod Cream may cause serious side effects including:

- Local skin reactions, including:
 - skin drainage (weeping)
 - ulcers
 - severe swelling near the vagina. This may lead to pain or trouble passing urine or cause you not to be able to urinate. Female patients should take special care when applying Imiquimod Cream at the opening of the vagina.
- Flu-like symptoms: tiredness, fever, nausea, muscle pain and chills.

Tell your healthcare provider right away if you have any of the symptoms listed above.

The most common side effects of Imiquimod Cream include:

- itching
- burning
- redness
- flaking and scaling
- dryness
- swelling and crusting
- scabbing
- skin that becomes hard or thickened
- sores, blisters, or ulcers
- changes in skin color that do not always go away

Tell your healthcare provider if you have any side effect that bothers you or that does not go away.

These are not all the possible side effects of Imiquimod Cream. For more information, ask your healthcare provider or pharmacist.

Call your doctor for medical advice about side effects. You may report side effects to Strides Shasun Limited at 1-877-244-9825 or go to www.strideshasun.com or contact FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

How do I store Imiquimod Cream?

- Store Imiquimod Cream at 39°F to 77°F (4°C to 25°C).
- Do not freeze.
- Safely throw away unused Imiquimod Cream or partially used Imiquimod Cream packets that you do not need.

Keep Imiquimod Cream and all medicines out of the reach of children.

Medicines are sometimes prescribed for purposes other than those listed in this Patient Information leaflet. Do not use Imiquimod Cream for a condition for which it was not prescribed. Do not give Imiquimod Cream to other people, even if they have the same symptoms you have. It may harm them.

This Patient Information leaflet summarizes the most important information about Imiquimod Cream. If you would like more information, talk with your healthcare provider. You can ask your pharmacist or healthcare provider for information about Imiquimod Cream that is written for the healthcare professionals.

What are the ingredients in Imiquimod Cream?

Active ingredients: imiquimod

Inactive ingredients: isotretinoin acid, cetyl alcohol, steryl alcohol, white petrolatum, polysorbate 60, sorbitan monostearate, glycerin, xanthan gum, purified water, benzyl alcohol, methylparaben and propylparaben.

Manufactured for:
Strides Shasun Limited

Made in India

Distributed by:
Strides Pharma Inc.
East Brunswick, NJ 08816

Revised: 07/2016

1027469

380 x 380 mm

BACK SIDE

ARTWORK DETAIL LABEL

Product	IMIQUIMOD CREAM 5% [BELTAPHARM]		
Buyer/Country	Strides Pharma Inc	Component	Pack Insert
Dimension	380 x 380 mm	Pack	--
New Item Code	1027469	Old Item Code	1025264
Colour Shades	Black	No. of Colours	1

Change Control No.	PC-ODF/2016/049 - Record# 85273		Artwork Version	3.0
Design/Style	Front & Back Printing. To be supplied in the folded size 95 x 47.5 mm mm - Brand name facing front side			
Substrate	40/60 GSM Paper.			
Special Instructions	Printing clarity to be clear & sharp.			
Autocartanator Requirements	NA			
Prepared By:	Reviewed By:	Approved By:	Approved By:	Authorised By:
PDC - AW	PDC - Tech	Mk/BD	RAD	QA

FOR ARTWORK REVISION PURPOSE

To be filled by SCM (Planning)	Effective Date:	Sign & Date:
Caution to the printer: Before processing, please ensure that the ARTWORK received for printing is exactly in line with APPROVED ARTWORK provided to you. In case of any FONTS/DESIGN are Mis-matching with the APPROVED ARTWORK, please inform PDC for further action. DO NOT MAKE ANY CHANGE TO THE ARTWORK WITHOUT WRITTEN INSTRUCTIONS FROM PDC.		