DESCRIPTION

Nimulid Transgel, brand of Nimesulide Transdermal Gel is chemically 4-Nitro-2-phenoxymethane sulfonanilide. It belongs to a chemical class - sulfonanilide in the category of nonsteroidal antiinflammatory drugs (NSAIDs). Nimulid Transgel is slightly translucent, faintly yellow coloured gel.

COMPOSITION

Each g contains:

Nimesulide ........................................ 10 mg
In a water soluble gel base
Alcohol content 66% v/v

PHARMACOLOGY

Nimesulide is a nonsteroidal anti-inflammatory (NSAID) agent which also possesses analgesic properties. Nimesulide has been shown to have potency similar to or greater than that of Indomethacin, Diclofenac, Piroxicam, and Ibuprofen in standard animal models of inflammation. Nimesulide is a selective cyclooxygenase 2 inhibitor and appears to exert its effect through variety of mechanisms including free radical scavenging, prevention of Bradykinin / cytokinin induced hyperalgesia of nerves, blocking of histamine release and prevention of cartilage damage by inhibition of metalloprotease synthesis.¹

Anti-inflammatory activity of Nimulid Transgel was examined in albino rats in various animal models. The anti-inflammatory action of topical Nimulid Transgel was more than diclofenac gel against carrageenan and formalin induced rat paw edema. It was more effective than diclofenac and piroxicam gel against both acute and chronic phases of inflammation in Freund's adjuvant induced arthritis model. The order of potency was : Nimesulide gel > Diclofenac gel > Piroxicam gel.²

Nimulid Transgel was also evaluated for primary skin irritation, eye irritation and phototoxicity in rabbits. Nimulid Transgel does not cause allergic manifestation, reddening etc. Phototoxicity studies have shown that Nimulid Transgel does not cause erythema or any other allergic manifestation even on exposure to ultra violet - A rays. Patch test applied for 72 hours in rabbits did not reveal any allergic reaction. Further human volunteers study provided evidence of safety of Nimulid Transgel on topical application. A mild tingling sensation was observed, but was not serious enough to remove the applied gel. No other change in skin structures was observed.

Nimulid Transgel when applied topically is continuously and gradually released from skin into the underlying muscle or synovial fluid and equilibrium between skin and muscle or synovial fluid is achieved rapidly. The systemic absorption of Nimulid Transgel when applied
topically is not significant, since plasma levels of Nimesulide remained below the sensitivity limit of HPLC and at 5 hours very low concentration (100µg/l) of 4-Hydroxy Nimesulide was detectable in plasma.

PHARMACOKINETICS

Pharmacokinetic studies were carried out on rabbits and the concentration of drug in the plasma was determined by HPLC. The retention time for Nimesulide was found to be at 11.5 minutes. Plasma extracts did not show any detectable levels of Nimesulide. However at 3.4 and 5 hours, a peak corresponding to 4-hydroxy Nimesulide (retention time 3.5 minutes) was obtained in plasma extracts. No significant difference was observed in the concentration of 4-hydroxy Nimesulide at 3, 4 and 5 hours and the plasma concentration detected was 100 µg/L. Similarly, in human beings (n=10) with 10 mg dose of Nimesulide (1 g Nimulid Transgel) after application, a T_{max} of 1.53±0.2 hrs, C_{max} of 0.387 ± 0.12 mcg /ml, AUC (0-12 hrs) of 2±0.46 mcg/ml/hr and T_{1/2} of 6.58 ± 1.2 hrs was achieved.

INDICATIONS

Nimulid Transgel is indicated for a variety of conditions characterized by pain, inflammation and stiffness, such as osteoarthritis, periarthritis, post-traumatic or acute musculoskeletal disorders including tendinitis, tenosynovitis, sprains, strains and low back pain.

CONTRAINDICATIONS

Nimulid Transgel should not be used in those patients who have previously shown a hypersensitivity to it or Nimesulide in any of its dosage forms.

WARNINGS

Usage in pregnancy and in nursing mothers : There are no well controlled studies available regarding use of Nimesulide in pregnant women and nursing mothers. Like other NSAIDs avoid use of Nimesulide in such cases.

Usage in children : Experience of Nimulid Transgel in children has not been acquired. However, safety and efficacy of Nimesulide in children is well established.

PRECAUTIONS

If local irritation develops, the use of the gel should be discontinued and appropriate therapy instituted as necessary. Do not apply on eyes, mucosal surface or to any sites affected by open skin lesions, dermatosis, or infections.

DRUG INTERACTIONS

With regard to absorption, there is some evidence that Nimesulide may decrease the oral bio-availability of furosemide (frusemide). Nimesulide is extensively bound to plasma proteins and may be displaced from binding sites by concurrently administered drugs such
as fenofibrate, salicylic acid and tolbutamide. In addition, Nimesulide may displace salicylic acid and furosemide (but not warfarin) from plasma proteins. Major interactions involving interference with drug metabolism have not been described with Nimesulide. A marginal decrease in plasma theophylline levels (without changes in respiratory function tests) has been described after addition of Nimesulide to chronic theophylline therapy. The above drug interactions were observed when the drug was administered orally. Drug interactions have not been reported, in case of the drug being applied topically.

ADVERSE REACTIONS

Adverse reactions possibly related to treatment have been infrequently reported. In clinical trials, the majority of side effects involved mild or moderate local irritation, erythema, rash, desquamation, pruritus and related local reactions at the application site. Mild, but transient skin discoloration and staining of clothing have been noted.

OVERDOSAGE

Overdosage is unlikely to occur with this topical application. However, caution should be advocated to prevent accidental overdosage in children by keeping the drug out of reach of children.

DOSAGE AND ADMINISTRATION

This product is intended for external use only. No occlusive dressing should be employed. Do not rub vigorously.

A dosage of Nimulid Transgel corresponding to (2-3 cm or 1-1\(\frac{1}{4}\)"") from the tube should be applied to the affected site three or four times per day, however it may vary depending on the size of the affected area and response. Therapy should be reviewed after 4 weeks.

STORAGE INSTRUCTIONS

Keep away from excessive heat or direct sunlight. Do not refrigerate. Replace cap tightly.

PRESENTATION

Available in 30g tube.

REFERENCES