Topical NSAID'S

What are Non-Steroidal Anti-inflammatory Drugs (NSAIDs)?

Non-Steroidal Anti-inflammatory Drugs, also known as NSAIDs, is normally prescribed orally to relieve fever, mild to moderate pain and inflammation. The way they provide this relief is through the blockage of enzymes, specifically cyclooxygenase (COX).

There are two COX enzymes: COX-1 and COX-2. These enzymes produce prostaglandins when the body is under stress which results in fever, pain and inflammation. The two COX enzymes have individual functions. The prostaglandins that are produced by COX-1 protect the lining of the stomach and support platelets, whereas COX-2 is only active at the site of inflammation. Therefore, when NSAIDs are used orally the levels of prostaglandins are reduced diminishing any fever, pain and inflammation, as well as the protection of the stomach and support of platelets resulting in stomach upset, ulcers and bleeding over time.

Examples of Conditions NSAIDs are Used For:

- Headaches
- Arthritis
- Sports Injuries
- Menstrual Cramps
- Fibromyalgia

Examples of NSAIDs:

- Aspirin
- Ibuprofen (Motrin®, Advil®)
- Ketoprofen (Orudis®, Oruvail®)
- Naproxen (Naprosyn®, Alleve®)
- Indomethacin (Indocin®)
- Diclofenac (Voltaren®)
- Piroxicam (Feldene®)
- Nabumetone (Relafen®)
- Celecoxib (Celebrex®)

What are other routes that NSAIDs can be administered?

NSAIDs do not only have to be taken orally. There are alternative routes to administer NSAIDs to maximize therapy, such as topically or transdermally. Compounding pharmacists have formulated a variety of NSAID transdermal gels/creams that can be applied directly to the site of pain and inflammation. These gels were developed to accommodate for individuals that have specific needs for their condition and avoid the adverse effects associated with long-term oral use. Prescriptions are still required to receive a topical NSAID by a licensed prescriber.

Most NSAIDs are available as a transdermal gel/cream. NSAIDs that are most commonly prescribed as a transdermal gel/cream are: Ibuprofen, Ketoprofen, Naproxen, Indomethacin, Diclofenac, and Piroxicam.

How are topical NSAIDs administered?

When applying a topical NSAID, only a small amount (¼ teaspoon) of gel/cream is needed to treat the site of pain and inflammation- as long as the affected area is kept covered. The gel/cream is normally applied three times daily to attain adequate relief of pain and reduce inflammation.

What are the advantages of using topical NSAIDs over oral NSAIDs?

- Avoidance of stomach upset, ulcers and bleeding
- Avoidance of liver metabolizing medication
- Greater concentration of medication at site of pain and inflammation
- NSAID transdermal gels/creams are less costly

What are some limitations with topical NSAIDs?

- Skin penetration power (individuals vary in depth of penetration)
- Residues left on skin surface

Other Advancements with Topical NSAIDs

Topical NSAIDs can be maximized with additional medications to solve secondary problems:

- *To relieve muscle strain:* Add a muscle relaxant.
- *To relieve nerve pain:* Add a neuroleptic.
- *To relieve increased pain:* Add other analgesics.

Why aren't Topical NSAIDs available commercially?

Drug manufacturers do not offer topical NSAIDs commercially since the drugs are off patent (no sole ownership) and there is no guaranteed profit if an investment is made.

Are Topical NSAIDs covered by insurance?

NSAIDs may be covered by your insurance company. In general, Worker's Compensation Insurance will pay the entire cost of the gel/cream.

The Uniqueness of Compounding

Compounding pharmacies specialize in developing innovative formulations of classic medications. There are so many different dosage forms that medication can be produced that can provide the same therapy as the original form or even maximize the therapeutic value.

An example of a different dosage form is Topical Non-Steroidal Anti-inflammatory Drugs (NSAIDs). NSAIDs are one of the most commonly prescribed oral medications for pain and inflammation. Many are unfamiliar that this type of medication can be used topically.

Explore the many possibilities that topical NSAIDs have!