

# Willgo™

**WORLD'S FIRST EXTENDED RELEASE\* FORMULATION  
FOR 24 HOUR PAIN MANAGEMENT**

## 1. Introduction

Nimesulide is a non-steroidal anti-inflammatory drug (NSAID) indicated for the **management of a variety of painful and inflammatory conditions** like post operative pain, primary dysmenorrhea and painful osteoarthritis. Nimesulide is currently marketed in more than 50 countries and till date, approximately 346 million treatment courses have been administered during Nimesulide's 19 years of presence in the market. With the recent concerns associated with the safety of selective COX-2 inhibitors, there has been increased interest and preference for Nimesulide due to its unique COX-1 / COX-2 selectivity ratio and established safety and efficacy.

Though there are conventional Nimesulide tablets available in the market, it needs to be taken twice daily for optimum effect. Besides, Nimesulide has a limited absorption window mainly from the upper part of GIT. **Willgo™** offers both immediate and sustained relief from pain. It is designed to be taken once daily after dinner, for full 24 hour relief from pain and effective management of morning stiffness.

The European Agency for Evaluation of Medicinal Products (EMA) has also published an opinion stating that Nimesulide is effective in acute pain, dysmenorrhoea and in the symptomatic treatment of painful osteoarthritis. ([Refer original article](#))

## 2. Medical Need

Effective management of painful conditions involves effective solutions in terms of providing optimum pain control, absence of side effects and long lasting pain relief. The option is always to choose a therapy with potent analgesic, anti-inflammatory and anti-

pyretic effects, which provides optimum pain relief with good safety and tolerability leading to high level of therapeutic success.

**Willgo™** offers the following **advantages** over conventional Nimesulide dosage forms:

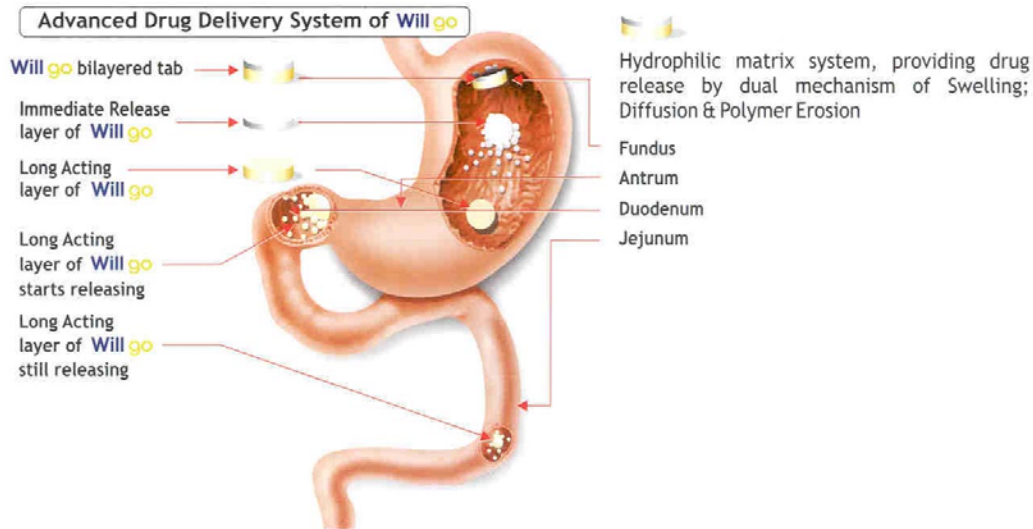
- ▪ Plasma level above MEC (1µg/ml) is achieved within one hour. Peak plasma levels are achieved in 5-6 hours
- ▪ Blood levels above MEC is maintained even after 18 hours
- ▪ Reduces dosage frequency from twice daily to once daily thereby improving patient compliance
- ▪ Favorable gastric tolerability leading to long term pain management
- ▪ The time to achieve peak plasma levels have been fine tuned to offer a convenient night time - after meal dosing for the treatment of morning stiffness
- ▪ Accumulation of the drug and side effects are negligible which is quintessential to long term therapy

### 3. Willgo™ Drug delivery system

- ▪ It has been formulated using Hydrophilic Matrix System providing drug release by dual mechanism of Swelling – Diffusion and Polymer Erosion.  
**Willgo™** is a **bilayer compressed tablet** containing 200 mg of Nimesulide.

#### 3.1 Mechanism of action

- ▪ Nimesulide immediate release layer releases the drug within few minutes
- ▪ The Nimesulide in the extended release\* layer is uniformly dispersed in a hydrophilic matrix system. On contact with the gastric fluids the tablet swells and the system quickly forms a gel layer around the tablet
- ▪ The swollen matrix moves forward in the GIT along with the food. There the gel layer erodes and dissolves to release Nimesulide at a constant rate for 18-20hours in a predetermined fashion



## 4. Clinical experience

### 4.1 Study I

(Conducted in New Delhi, India): A 12 volunteer double blind, randomized, two ways crossover, comparative pharmacokinetic evaluation of extended release\* Nimesulide 200mg (**Willgo™**) tablet vs Nimesulide conventional release 200mg tablets

#### Observations

- ▪ Nimesulide extended release\* 200mg tablet when taken 10 minutes after food, started exhibiting appreciable concentrations within one hour and reached a mean peak concentration of 8.87mg/ml at 5.33 hours (4.02 mg/ml at 12 hrs, 0.74 mg/ml at 24 hrs). In comparison, Nimesulide conventional release 200mg taken after food reached a mean peak concentration of 9.3mg/ml at 3.6 hours (2.87/ml at 12 hrs and 0.41mg/ml at 24 hrs)
- ▪ The AUC (bioavailability) values for Nimesulide extended release\* 200mg formulation at 0-24 hours was 92.1mg/ml.hr as against 76.7mg/ml.hr for the conventional release formulation.
- ▪ The elimination half-life for Nimesulide extended release\* 200mg was 5.2 hours as against 3.97hours for the conventional release formulation.
- ▪ The extended release\* formulation showed a mean residence time of 10.39 hours as against 7.95 hours for the conventional release formulation.

#### Conclusion

- ▪ There is better oral bioavailability of Nimesulide extended release\* 200mg over Nimesulide conventional release 200mg formulation
- ▪ Due to the longer residence time of the test formulation in the body, sustained blood levels for Nimesulide are expected to be maintained for a much longer duration of time.

#### 4.2 Study II

Phase III open labeled, randomized, prospective, multicentric, comparative study to evaluate the efficacy and safety of **Willgo**<sup>TM</sup> (Nimesulide extended release\* tablets 200 mg) vs Voveran SR (diclofenac sustained release tablet 100 mg) was done in patients with osteoarthritis of knee. A total of 238 patients were given study medication for 30 days and evaluated for pain relief and global efficacy.

#### Results

- ▪ The onset of action was within half an hour for both treatment groups.
- ▪ Efficacy of **Willgo**<sup>TM</sup> was comparable to diclofenac at all time points, and it was observed that efficacy was significantly better at 8 hr (day 1) and day 30.
- ▪ No adjuvant, analgesic therapy was required in the **Willgo**<sup>TM</sup> group.
- ▪ There was no treatment related withdrawal in **Willgo**<sup>TM</sup> group due to adverse event where as one subject reported gastric discomfort with diclofenac

#### 5. IPR Status

Product patents have been filed in all major countries across the globe and have is already granted in the following countries:

Australia, Nigeria, North Korea, Russia, Singapore, South Africa, Sudan, Tanzania

#### 6. Development Stage

- ▪ Commercialized in the Indian market
- ▪ CTD compilation for regulated markets in progress.

## 7. Product Presentation

**Willgo™**

Nimesulide Extended Release\* Tablets

Each uncoated extended release\* tablet  
contains:

Nimesulide BP 200mg

Colour Ferric Oxide Red USNF

\* Changed from long acting to extended release w.e.f. 10.03.2006