

A BRIEF HISTORY OF PPI



Journey from
H₂ blocker
(Cimetidine)

to



NEXE

(Esomeprazole)



Apex
pharma

www.apexpharmabd.com

1969
Before
1970

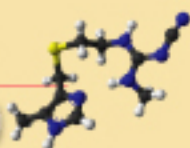


The Ravage...

...of **Gastric acid** caused **Peptic ulcer** and **GERD** with pain and sufferings in **millions of people** which were **life-threatening** ...

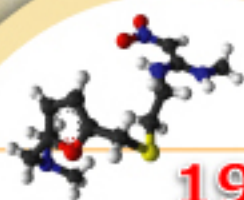
in late

1970



had a breakthrough in medical treatment with the introduction of H₂ blocker-

CIMETIDINE



in

1981

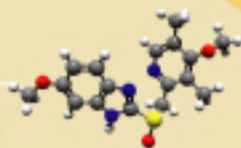
another H₂ blocker-

RANITIDINE

added a new dimension

in

1988



AstraZeneca 

The giant British
Pharmaceuticals introduced

the revolutionary
molecule

OMEPRAZOLE

as the first PPI, which
became world's best selling
drug in 1990's

[Later on, based on the chemical structure of Omeprazole, some other companies introduced couple of PPIs with same or better efficacy like **Pantoprazole**, **Lansoprazole** and **Rabeprazole** but could not satisfy the ultimate need]

Due to some limitations, **Omeprazole** required some **improvements**. More than **30 Scientists** Synthesized & Screened several hundreds of compounds for one, that could possibly surpass the **Omeprazole** ...

During **1989-1994** four compounds passed, that demonstrated superior bioavailability compared to omeprazole...

But Considering all key parameters like...

- Pharmacokinetic properties
- Acid inhibitory effects &
- Safety issues...

On the basis of the requirements,

AstraZeneca 

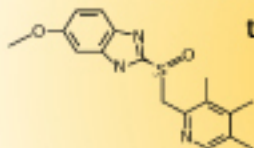
started a new acid inhibitor research program

Only one compound exceeded Omeprazole & that is one of its optical isomers (**S-isomer**)

in **2000** again

AstraZeneca 
launched **pure and super PPI**

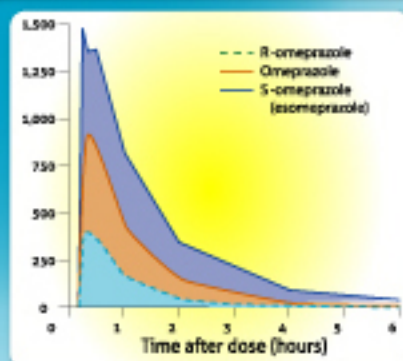
Esomeprazole,
the **S-isomer** of Omeprazole



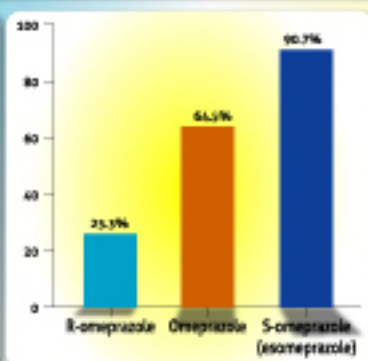
which is distinctly **clinically superior** to Omeprazole and other PPIs as well as became the highest selling drug among all drugs

Shows

Excellent Pharmacokinetic Properties

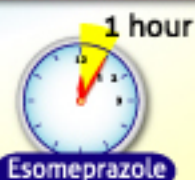


Mean plasma concentration (nmol/L)

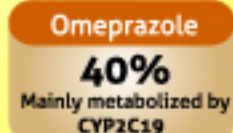


Inhibition of pentagastrin-stimulated gastric acid secretion

Faster onset of action



Excellent metabolic stability with higher bioavailability



No or Less Drug-Drug Interactions

- Omeprazole reduces the efficacy of clopidogrel
- Esomeprazole has no interaction with clopidogrel



Longer duration of action (Intragastric acid pH > 4)



Safety in pregnancy by USFDA





offers



NEXE

Esomeprazole

The
fastest PPI
with
longer action



20 mg Tablet

Per Tab.
only

₹4



40 mg Tablet



Per Tab.
only

₹7



Ref - Nature Reviews, Drug Discovery Volume 2, February 2003
Eur J Clin Pharmacol (2008) 64, 325-451



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