DEBATE

Isomers vs Parent Drug

For : Parent Drug

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Isomers

- Enantiomers
- Mirror images
- Parent Drug
  Racemate = mixture of two

- **Justification (allegation)**
  *One is good, the other ? useless, maybe bad*
PATENT WARS

PATIENT WARS

ISOMERS
Down memory lane....

• 1967
• A story about a character (2\textsuperscript{nd} Dev Anand) … impression created is that the character is larger than life, but in fact, it doesn’t even exist!!
• \textbf{Isomers} – a story of \textit{superiority that doesn’t exist, a need that doesn’t exist}!!
‘Me – too’ copycats

- Once a researcher identifies new chemical class effective against a disease state → major drug companies work overtime to come up with their own versions that could do roughly the same thing → ‘me-too’ products

- **Most → offer no significant clinical advantages but are different enough to win a patent and then be marketed, at identical / higher prices**

- **1962 - Former head of research at E.J. Squibb –**

  “...more than half of corporate research is driven towards developing me-too drugs. And I should point out that with many of these products, it is clear while they are on the drawing board that they promise no utility. They promise sales.”
Trend setting….

- **Prilosec (omeprazole)** licenced for marketing in 1989, raked in millions, patent to expire in 2001
- **Operation SharkFin** by Astra – to find a substitute to prilosec → discovered **nexium** (enantiomer half of prilosec)
- **$120 million study** to prove superiority of nexium over prilosec – **3% better cure rate (80 vs 77)**
- 1990s Schering Plough – **Claritin (loratidine)** – 2001 – desloratidine

*The $800 Million Pill: The Truth Behind the Cost of New Drugs*, By Merrill Goozner, University of California Press, Copyright 2004
Much ado about nothing .. ?

Single - enantiomer drugs: elegant science, disappointing effects


“Reviewed clinical evidence and prices …claims of increased efficacy were based on comparisons of non-equivalent doses and any advantages seemed small and clinically unimportant. Prices …higher … will remain high …perception of superiority based on promotion rather than evidence …not justified…. on the basis of clinical performance.”
Levosalbutamol

• Evidence based review on levosalbutamol
  Gupta MK, Singh M, Dept. of Pediatrics, PGI, Chandigarh, India (IJP 2007)

  “….large multicenter trials are needed to prove its therapeutic superiority and cost-effectiveness in long term.”

• The pharmacokinetics of levosalbutamol: what are the clinical implications?
  Boulton DW, Fawcett JP, Medical Univ. of South Carolina, USA. (Clin. Pharmacokinet. 2001)

  “…well-designed clinical studies in patients with asthma have failed to find evidence of significant toxicity associated with (S)-salbutamol…in the absence of clear evidence of toxicity the clinical superiority of levosalbutamol over racemic salbutamol appears to be small.”
Cetirizine vs Levocetirizine

• The comparison of cetirizine, levocetirizine and placebo for the treatment of childhood perennial allergic rhinitis

Lee CF, Sun HL, Lu KH, Ku MS, Lue KH, Dept of Pediatrics, Chung Shan Medical University Hospital, Taiwan. (Peadiatr Allergy immunol. 2009)

“….the 12-week treatment program showed that cetirizine was more effectious than levocetirizine.”

• Comparative efficacy of cetirizine and levocetirizine in chronic idiopathic urticaria

Garg G, Thami GP, Dept of Dermatology and Venereology, Government Medical College and Hospital, Chandigarh, India.(J Dermatolog Treat. 2007)

“….the clinical efficacy of cetirizine and levocetirizine was comparable with a marginal advantage of better antipruritic effect with levocetirizine, probably at the cost of increased sedation.”
"In conclusion, in contrast to esomeprazole, the S-enantiomer of omeprazole, minimal if any clinical advantages would be expected in developing any of the enantiomers of lansoprazole, pantoprazole, or rabeprazole as compared with their racemates."
Escitalopram - antidepressant

• Escitalopram: superior to citalopram or a chiral chimera?

“CONCLUSIONS: On the evidence available to us the manufacturer's claims of superiority for escitalopram over citalopram are unwarranted. The Swedish and Danish drug regulatory authorities reached similar conclusions.”

• Is escitalopram really relevantly superior to citalopram in treatment of major depressive disorder? A meta-analysis of head-to-head randomized trials.

“CONCLUSION: Presently, the claims about clinically relevant superiority of escitalopram over citalopram in short-to-medium term treatment of major depressive disorder are not supported by evidence.”
‘REINCARNATIONS’ MAY RAKE IN MILLIONS, BUT ARE NOT NECESSARILY SUPERIOR!!
It’s hot
But I don’t have time to read a lot
It is the latest
But is it really the best?
Pharma says – ‘a star is born’
My conscience tries to warn
Pharma says – ‘side effects are rare’
Experts say effects are equally rare!
“It costs only a ‘packet’”
Am I unwittingly part of a racket?
Pharma throws parties – let yourself loose!
But it’s up to us to use, abuse or just continue to muse!