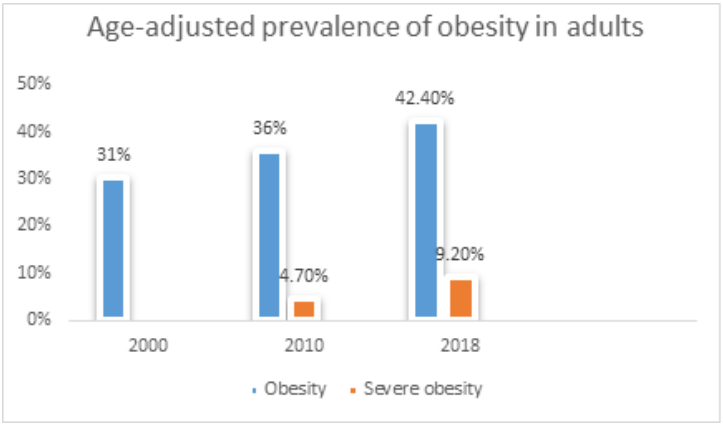
- Intelligence Simplified

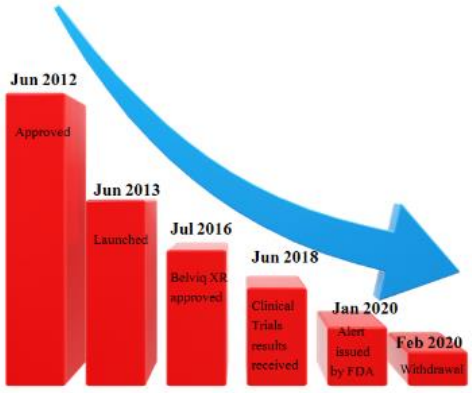
Rise & Fall of once Celebrated - BELVIQ:

BELVIQ, seemed like the answer for the war-on-obesity. Or so it only seemed. Discovered and developed by Arena Pharmaceuticals, Inc., lorcaserin was a novel chemical entity that was appetite-suppressant and promote satiety by selectively activating serotonin 2C receptors in the brain.It was a celebrated new chemical entity to be approved (2012) as an anti-obesity prescription drug in the United States in 13 years, has finally acceded to red flags raised by USFDA.

Prevalence and Occurrence: According to the U.S. Centers for Disease Control and Prevention, over two-thirds of adults in the United States were either overweight or obese, with the percentage of obese people more than doubling (from approximately 15% to 36%) between 1980 and 2010 (at the time of NDA submission for lorcaserin) increased to 42.4% in 2017–2018. Seems like a lucrative market for a drug to grow.



Boon or bane? Lorcaserin was deemed a boon to those afflicted with the conditions and was also covered by several prominent health plans and pharmacy benefit managers (PBMs) including, but not limited to, Express Scripts (including its legacy Express Scripts and Medco operations), Tufts, Health Alliance Plan, Excellus BCBS, Highmark BCBS, BCBS of Michigan, BCBS of North Carolina, and Healthnet (California).



Journey begins to end soon: Lorcaserin was approved in June 2012 by the U.S. Food and Drug Administration (FDA) as an adjunct to a reduced-calorie diet and increased physical activity for chronic weight management in adult overweight or obese patients (with at least one weight-related co-morbid conditions).

So, did Eisai's decision to voluntary withdraw the drug from US in February 2020 for potential risks of cancer come as rude awakening? Or was this a disaster on the verge of happening? Dialing back the microscope from US, answers lay in Arena's attempts to seek approvals in Europe and Canada.

Ignored RED Flags

1. EUROPE- *Withdrawal of Marketing Authorization May 2013 in Europe by Arena Pharmaceuticals.*

March 26, 2012: Marketing Authorization Application (MAA) was accepted by EMA (European Medicine Agency) as submitted by Arena Pharmaceuticals based on Phase III clinical trials BLOOM; within 14 months Arena Pharmaceuticals notified CHMP (Committee for Medicinal Product for Human Use) withdrawal of its application.

Basis: *CHMP asked Arena to clarify on concerns about the potential risk of tumors particularly related to long term use. Additionally, CHMP raised safety concerns including potential risk of psychiatric disorders and valvulopathy.*

Action Taken: Arena Pharmaceuticals, stating that they could not address the questions within the given time frame issued by CHMP, decided to withdraw the submission.

2. CANADA- *Withdrawal of NDA in Feb 2018 in Canada by EISAI.*

In Nov 2016 New Drug submission for lorcaserin was accepted for review by Health Canada. However, in Feb 2018 EISAI withdrew the submission before Health Canada could issue a final decision.

Basis: *Health Canada had identified some open questions about the data submitted by EISAI from Phase III studies.*

Action Taken: EISAI could not address the questions and decided to withdraw the submission.

US Withdrawal- "Houston, we have a problem"

January 14, 2020: USFDA announced and alerted the public about a possible risk of cancer associated with lorcaserin based on 12,000 patients data over 5 years, **7.7 %** of patients treated with lorcaserin were diagnosed with cancer compared to the placebo group, in which **7.1** %of patients were diagnosed with cancer (including pancreatic, colorectal, and lung). On February 13, 2020 USFDA requested EISAI to voluntarily withdraw the weight-loss drug from the U.S. market.

EISAI's compliance with FDA's recommendation has now taken the pill off the market. Attorneys across the country are having a field day investigating lorcaserin cancer cases – independent and class actions. The events in US are in stark contrast with those in Europe and Canada, which only begs for more contemplation on unasked and unanswered questions – Should the US FDA have taken cues from EMA and Health Canada in the matter? Could the US FDA have averted this disaster sooner? Where should the buck stop? It eventually does but at the cost of patient lives.