Young Adult Series: "The Science"

Course #10: Case Study - Vioxx

Guided Notes

Remember: You can pause the video for extra time on any section.

1998: Merck asks FDA for approval of Vioxx after 8 studies with 5,400 subjects (people).

Intended purpose of Vioxx: To be a safer alternative to non-steroidal anti-inflammatory drugs for the treatment of pain associated with osteoarthritis.

January 1999: Merck launches VIGOR- Vioxx Gastrointestinal Outcomes Research Study, 8,000 participants, half taking Vioxx, half taking competing product Naproxen. Merck hoped to prove that Vioxx was safer for patient's digestive systems than Naproxen was.

May 1999: VIGOR not complete, but FDA approve Vioxx for prescription use in USA.

- Five months later, VIGOR finds those taking Vioxx did have lower incidence of ulcers and gastrointestinal bleeding than those on Naproxen.

November 1999: Second data and safety board meeting takes place.

- 79 patients of the 4,000 Vioxx recipients had serious heart problems or died, compared to 41 taking Naproxen.
- The panel vote to continue the study.

December 1999: The panel holds last meeting.

- Vioxx patients twice as likely to experience serious heart problems and death compared to those taking Naproxen.
- The panel still vote to continue the study.
- Chairman, Dr. Michael Weinblatt, rheumatologist of Brigham & Women's Hospital in Boston, and Merck statistician Deborah Shapiro pen letter to Merck that they would need to develop a plan to analyze the study's cardiovascular results.
- Panel claim that at the time, they were unable to determine if it was Vioxx causing higher risks of death, or, if the Naproxen was protecting people from them.

January 2000: Merck wants to wait and combine the results of VIGOR with other Vioxx results.

- Chairman of the safety panel Dr. Michael Weinblatt pushed for immediate release of the results. They agree to analyze the results by February 10, 2000.
- Dr. Weinblatt filled out a disclosure form that he and his wife owned $72,975 of Merck stock. Dr. Weinblatt then agrees to a new consulting contract with Merck, where he will serve as a member of the Vioxx Multidisciplinary Advisory Board.
- The contract is signed on March 6, and will include 12 days of work over two years, at a rate of $5,000 per day. In other words, $60,000 for 12 days of work.
- In the same month, Merck gets the latest results of the VIGOR trial.

May 2000: Merck submits the VIGOR paper to the New England Journal of Medicine for publication, but leaves off 3 of the heart attacks that patients had, including only 17 of the 20.

July 2000: Memo is sent from one co-author of the paper to another, both Merck employees, addressing those 3 heart attacks, but no one sends the correction to the New England Journal of Medicine.

November 2000: The New England Journal of Medicine publishes the paper with the falsely low numbers of heart attacks and left out other adverse cardiovascular events (because Merck did not give them the correct information).

February 2001: FDA holds an advisory meeting on the VIGOR trials, publishes complete VIGOR data on its website, includes the additional 3 heart attacks and cardiovascular data.

- Using that full VIGOR data, three cardiologists publish a meta-analysis in the Journal of the American Medical Association, and they cast doubt on that idea that it's Naproxen protecting people's hearts, rather than Vioxx harming their hearts.

September 2001: Merck gets a warning letter from the FDA about the Vioxx promotional campaign "that minimizes the potentially serious cardiovascular findings" and "misrepresents the safety profile of Vioxx."

April 2002: FDA changes Vioxx warning label reflecting increased risk of heart attacks & strokes.

2002 to 2004: Multiple epidemiological studies start pointing to the increased heart risk with Vioxx. Meanwhile, Merck doesn't stop Vioxx, the FDA doesn't stop Vioxx, and Merck is studying Vioxx for even more reasons it could be prescribed to people.

September 2004: Merck had to stop its study, "APPROVe," which was a long-term study on Vioxx to determine if it could help with rectal polyps. The authors of the study had no choice but to report that while testing it for the polyps, double the patients in the Vioxx group had heart attacks compared to the placebo group.

Merck was left with little choice but to withdraw the drug upon the results of the study.

Roughly 20 million Americans took Vioxx.

Lancet Study: Estimates that 88,000 Americans had heart attacks due to Vioxx, and 38,000 of them died.

2005 – 2007: A lot of lawsuits, and arguments from Merck about how long someone had to take Vioxx to experience the heart attacks.

Merck paid $4.85 billion to victims and families in settlements, but refused to admit fault.

Sources:

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