Evaluation and Comparison of Multiple Resources for Prescription Medications

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Abstract

In an effort to improve society's health, scientists, researchers, and pharmaceutical companies around the world push drugs onto people in an attempt to preserve life and the quality of life. But is this really their agenda? With the pharmaceutical companies averaging a 700 trillion dollar revenue, it may be safe to hypothesize that money could be the main driving force behind the employment of many safe drugs, as well as known life-threatening drugs. Although one cannot postulate that every entity does this, because we should refrain from saying “always” or “never,” it does seem that there is quite enough reason for pharmaceutical companies to want their products in the homes and hospitals of billions. If pharmaceutical companies can get someone on their medicines, then typically they have a customer for life. Knowing the right sources to trust when investigating prescription medications is sometimes hard and takes experience. One must carefully evaluate all pros and cons of the medicines, as well as the reliability of each source they use.

DRUG 1

About 30% of Americans have high blood pressure; however, many struggle with finding a medication to manage it. According to the CDC, only 52% of patients have their conditions under control (2015). For many, high blood pressure is chronic, and patients will be on medications throughout their lives. There are hundreds of high blood pressure medications on the market, making it remarkably difficult to find one that will benefit each individual in the way that they need. The most difficult part of this dilemma is evaluating the patient and considering all physical circumstances, since everyone’s situation is different. The medication “Clonidine,” also known as “Catapres,” has been widely used and implemented in patients’ regimens across

the board, yielding positive results in the attempt to maintain a normal blood pressure. Although Clonidine has been shown to have significant benefits and improve patient's' blood pressure, as well as have multiple uses, it also comes with serious adverse side effects.

According to the Encyclopedia of Mental Disorders, Clonidine was first developed in 1960 and tested as a nasal decongestant. It's primary and most common use in the United States, however, was to treat hypertension (high blood pressure). Today, it is widely used and still most commonly known to be a high blood pressure medication. Impressively, clonidine has also been known to treat numerous neuropsychiatric disorders. Some of these disorders include but are not limited to: ADHD, tourette's syndrome (TS), and addiction (2015). Like in a patient with high blood pressure, an addict coming off of any drug (whether it be cocaine, heroin, or even alcohol and nicotine) needs medical help. The price one could pay by quitting cold turkey could be as great as death. Clonidine aids in this process by sending messages to neurons to dilate blood vessels, slow heart rate, and decrease adverse reactions of withdrawal, ultimately causing relaxation. Similarly, hypertensive patients experience this same sedated state, resulting in drowsiness about 30 minutes after consumption. With this calming effect, clonidine is able to effectively treat disorders in which a person is autonomically overactive and cannot consciously control hyperactivity on their own, hence why it is prescribed to ADHD and TS patients.

When coming off of Clonidine, one must be aware of the serious possible side effects that could occur. Although rare, dangerous consequences such as hypertensive encephalopathy, cerebrovascular accidents (CVAs), and death could result if not gradually weaned off of the prescribed doses. More common side effects while taking the medicine include: dry mouth, drowsiness, dizziness, constipation, and sedation (PDR, 2015). Interestingly enough, Clonidine

also stimulates the release of growth hormone from the pituitary gland, ultimately causing it's patients to gain excessive amounts of weight. This medicine is actually used as a tool in tests measuring levels of growth hormone in the blood. According to The University of Rochester Medical School, Clonidine is the quickest test for measuring GH levels, reaching peak secretion in approximately sixty minutes (2015). Even stated on the FDA package insert (underneath adverse reactions) it includes "weight gain" as a metabolic reaction (2009). Less frequent side effects, according to the DailyMed package insert, can include but are not limited to: congestive heart failure, anxiety, depression, sleep disorders, decreased libido, hallucinations, thrombocytopenia, dry eyes, and withdrawal syndrome (2013). However, depending on which resource one looks at makes a significant difference, as not every source's information will be the same.

Knowing the side effects of medications also comes with the responsibility of knowing the drug interactions it can have in combination with other medicines or substances. According to the FDA package insert of Clonidine, corneal lesions are possible to occur in combination with Amitriptyline (which treats depression) (2009). Patients who have coronary/heart disease, should also consult with their doctor before taking Clonidine, as some medicines could be cancelled out or even enhanced by Clonidine, ultimately causing additive effects (2009). This could be especially scary if taken with another central nervous system (CNS) depressant, as it could yield in the cessation of respiration. Alcohol would be a perfect example of this (Mayo Clinic, 2015). Because alcohol is a depressant, adding it to another depressant (such as Clonidine) would cause for an increased slowing of breathing, heart rate, and blood pressure. It is always wise to research drug interactions before taking any medication.

Overall, the effects of Clonidine are beneficial, but like any prescription medication, one should always consider any adverse effects and do their own research, in addition to their doctor's. Not surprisingly, physicians are not always right. They are human, nevertheless. Pros and cons should be weighed and decisions should be based on the likelihood that more positive effects will occur rather than negative effects. Just the list of side effects alone could send a patient spiraling down the path of hopelessness, but this is not true of all patient reactions. Each individual is different, which is why it is so important for the person to research any and all medications themselves before taking anything. Afterall, we know ourselves best.

DRUG 2

According to Dr. Charles Bennett from the South Carolina College of Pharmacy, "about 75% of all prescriptions are written off-label" (meaning- written for other things not originally intended for) (2015). This is concerning since many prescription medications come with very serious and potentially deadly side effects. Levofloxacin aka "LEVAQUIN" is among these controversial medicines. Levofloxacin, according to the FDA package insert, is in a class of drugs called fluoroquinolones. Fluoroquinolones are used to treat: pneumonia, acute bacterial sinusitis, acute bacterial exacerbation of chronic bronchitis, skin and skin structure infections, chronic bacterial prostatitis, urinary tract infections, acute pyelonephritis, and inhalational anthrax (post-exposure) (2008). These compounds are exceptionally potent antibiotics which should be used in the exact way they were intended to be used, in order to prevent deadly consequences. Although levofloxacin has been under fire for many deaths due to extreme side effects, one must consider the misuse of the physician's prescribing habits, contraindications, and also consider the benefits of the medicine before completely writing this medicine off.

Levofloxacin is greatly known for its use in cancer patients during their journey through chemotherapy (PubMed, 2005). It's unique ability to fight off bacteria and infection that other antibiotics could not otherwise fight off, has earned it a top spot in the arena of very powerful (potent) drugs. Depending on different resources, one will find different uses for Levofloxacin. For example, on DailyMed, urinary tract infections (UTIs) and plague are listed to be known cases in which Levofloxacin was implemented, whereas not mentioned in the FDA package insert (2014). Levaquin (interchangeably Levofloxacin) is typically used for chronic conditions such as the aforementioned: pneumonia, acute bacterial sinusitis, acute bacterial exacerbation of chronic bronchitis, skin and skin structure infections, chronic bacterial prostatitis, urinary tract infections, acute pyelonephritis, and inhalational anthrax (post-exposure) (2008). It is said to be the case that doctors will also prescribe Levaquin to patients for minor infections, such as "ear infections, sinus infections, urinary tract infections, and many other common bacterial diseases" (Forbes, 2012). This, of course, depends on the discretion of the doctor. In any case, there is an undeniable need for Levofloxacin.

Like any medication, there will most likely always be unwanted side effects. According to DailyMed, "Levaquin, a fluoroquinolone antibiotic, can cause serious side effects. Some of these serious side effects could result in death" (2014). With doctors being extremely crunched for time and overworked, patients need to be aware and stay abreast of potential outcomes with any medicine they take. Levofloxacin has manifested many spine-chilling side effects that would leave anyone questioning the sanity of their doctor for prescribing it. For example, the FDA package insert lists: "Risk of tendinitis and tendon rupture, Serious, occasionally fatal, anaphylactic reactions and allergic skin reactions, may occur after first dose, Hematologic

(including agranulocytosis, thrombocytopenia), and renal toxicities may occur after multiple doses, Hepatotoxicity: Severe, and sometimes fatal, Central nervous system effects, including convulsions, anxiety, confusion, depression, and insomnia may occur after the first dose, Clostridium difficile-associated colitis, Peripheral neuropathy, Prolongation of the QT interval and isolated cases of torsade de pointes" as warnings (2008). However, as terrifying as all of these reactions sound, the FDA actually fails to put the whole truth on the package insert. According to Dr. Charles Bennett, a scientist and oncologist who is calling for pharmaceutical companies to revise their list of side effects, Levofloxacin does a lot more than what is listed on their "Black Box Warning." Pursuant to his research on Levaquin, Bennett has also "linked neurodegenerative diseases like Parkinson's, Alzheimer's, amyotrophic lateral sclerosis (ALS), and mitochondrial toxicity" to the use of Levaquin (2015). Dr. Bennett is also a patient advocate, who runs SONAR (Southern Network on Adverse Reactions), and estimates there could be 30,000 potential deaths caused by taking quinolones such as Levaquin (CBS, 2015). More shockingly, a 2011 study found that 39% of the time, Levaquin is prescribed unnecessarily to patients (BMC, 2011).

Due to the many frightening side effects of Levaquin, patients may be even more concerned about how other medicines might affect its implications in the body's responses. One should, obviously, and for good reason, always consult with their doctor before mixing any medication. DailyMed warns not to mix Levaquin into an IV that has previously had a multivalent cation such as Magnesium present, proceed with caution when administering with Warfarin (as this can cause bleeding), and perform careful monitoring of blood glucose levels

when mixing with an antidiabetic agent. Contraindications warn not to mix Levaquin with another quinolone, as this can have an additive effect, causing even more danger (2014).

Prescription medications and their uses and effects can be confusing to understand, but patients should be mindful of what they are putting into their bodies, even if a licensed physician is the one prescribing it. As one can see, different resources will have different information regarding the side effects and uses of medications. The only way a patient will truly understand the medicine is if they do extensive research themselves, obtaining their findings from multiple different sources. There is, undeniably, a biased in the pharmaceutical industry, as money is a huge driving force behind the push for drug distribution. Without individual, independent, and unbiased research, one may never know exactly what they are subjecting themselves to.

Conclusion

Overall, one must remember to consider many factors when faced with the challenge of researching prescription medications. The first is to remember that doctors are human, and just because they have a medical license does not mean their decision making is fool proof. The second is to remember that pharmaceutical companies, undoubtedly, have a biased evaluation of the drugs they manufacture and distribute. The third is to seek out information from multiple resources and ultimately formulate a conclusion about the overall safety of taking the medicine. In researching information about the above mentioned drugs in this report, I found that sources written by independent parties (patients who can give their own testimonies) are extremely reliable, as they can tell exactly what side effects they faced and/or what benefits they experienced and appreciated. Scientists and researchers who are legitimately concerned with the safety of consumers are extremely credible sources, as they have no ties to the profits and

revenue of the prescription medications. I also found independent, whistleblower groups (such as SONAR) to be trustworthy sources. I believe Dr. Bennett was my favorite and most reliable source, as he is truly an advocate and voice for those patients who otherwise would not stand a chance up against huge pharmaceutical companies. There will always be conflicting advertising of products as long as money and competition are involved. The best solution is to weigh all input and decipher which parties would have a reason to distort the truth and which parties would not have a reason to. Consider how many negative reports there are in comparison to positive reports and finally draw a solid and sound conclusion.

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