RESEARCH OBJECTIVE:

To confirm claims of Mirtazapine, one of the most popular anti-anxiety and depression medications on the market, in that it has less incidence of Adverse effects and coincides with stated usage. This will be done by comparing data with patient feedback.

Mirtazapine

Description:

Mirtazapine is an antidepressant introduced by Organon International in 1996.

Use:

Treatment of moderate to severe depression. Mirtazapine has a tetracyclic chemical structure and is classified as a noradrenergic and specific serotonergic antidepressant (NaSSA). It is the only tetracyclic antidepressant that has been approved by the Food and Drug Administration to treat depression. PRESCRIBED also specifically for PTSD and as a major depressive disorder medication. [8]

Also known as:

Remeron, Avanza, Zispin

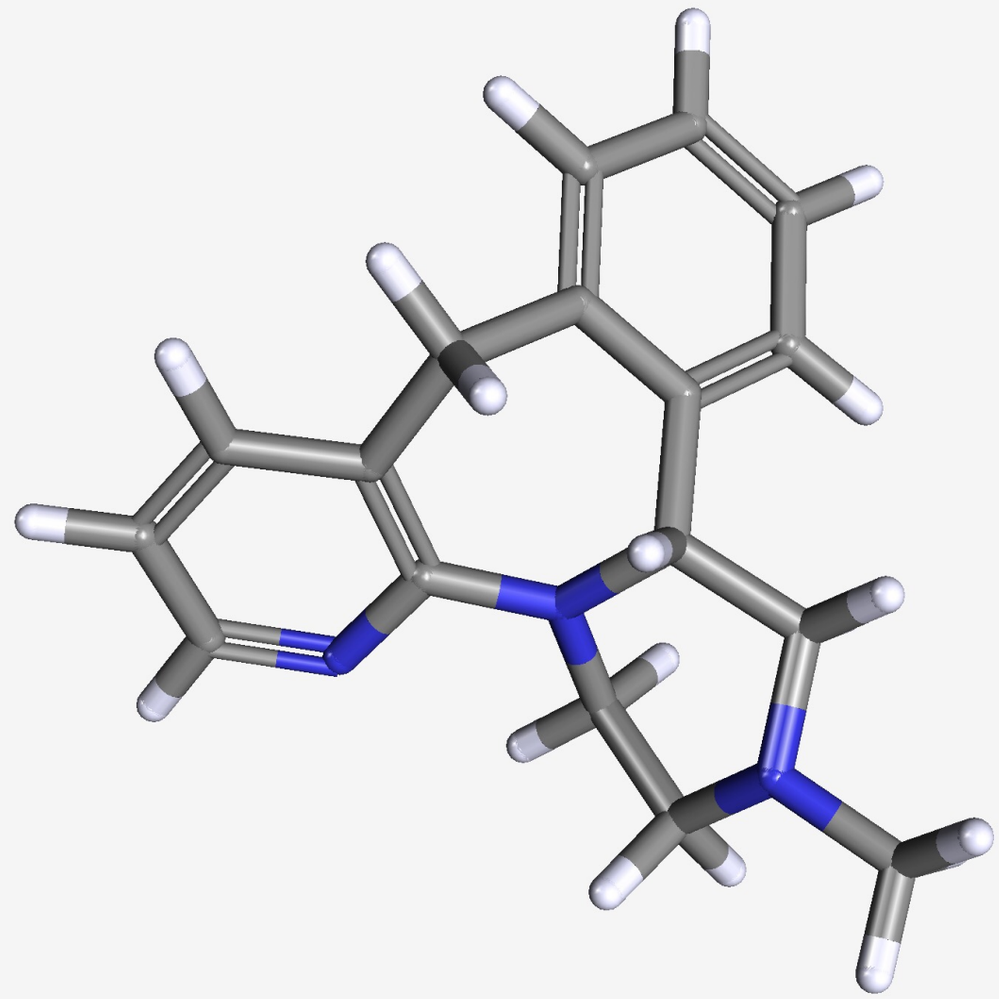
Metabolism-Source of ADR's

Mirtazapine is extensively metabolized by 2PHASE liver metabolization: demethylation and hydroxylation followed by glucuronide conjugation making the products transportable to the kidney where 75% of excretion occurs.

** Cytochrome P450 2D6 and cytochrome P450 1A2 are involved in formation of the "8-hydroxy metabolite" of mirtazapine, and cytochrome P450 3A4 is responsible for the formation of the "N-desmethyl and N-oxide metabolites."

**These 3 metabolites possess pharmacological activity... THESE ARE adverse effects on patient:ANXIETY, INSOMNIA, NAUSEA) but plasma levels are very low.

Chemical structure: Molecular Formula: C17H19N3 Tetracyclic structure containing 4rings.



Mechanism of Action

- Mirtazapine acts as an antagonist causing an increase in norepinephrine release. Blocks alpha(2)-receptors in serotenergic neurons increasing seratonin production. Each contributes to the anxiolytic (anti anxiety) effect of mirtazapine.[2]

- Mirtazapine ALSO acts as a weak antagonist at 5-HT1 receptors and as a potent antagonist at 5-HT2 and 5-HT3 serotonin receptors. Blockade of these receptors may explain the lower incidence of adverse effects such as anxiety, insomnia, and nausea. Mirtazapine also exhibits significant antagonism at H1-receptors, resulting in sedation. Mirtazapine has no effects on the reuptake of either norepinephrine or 5-HT and has only minimal activity at dopaminergic (THE primary anti-psychotic drug target inducing weight gain) effecting cognition, motivation and pleasure as well as muscarinic receptors effecting suppression of the parasympathetic NS (inducing increased sympathetic NS conditions).[2]

Supposed Efficacy compared to effectiveness:

Mirtazapine, an antidepressant is a tetracyclic compound (TeCAs)with an anxiolytic effect. Mirtazapine has fewer adverse reactions than other tricyclic antidepressants. Selective blockade of specific serotonin receptors by mirtazapine likely minimizes side effects typical of other antidepressants.[8]

TOXICITY & OVERDOSE:

- Symptoms of overdose include disorientation, drowsiness, impaired memory, and tachycardia.
- LD50 (Lethal dose at 50% concentration) is 600-720mg/kg (oral, mice) and 320-490mg/kg (oral, rat) [1]

Accepted effect

- One meta-analysis examining 4 studies demonstrated that the majority of weight gain took place during the first 4 weeks of treatment.[4]
- One open-labeled study involving 11 patients taking mirtazapine demonstrated that during the first week of therapy, a significant increase in weight (mean weight gain of 2.4 kg) was observed, and plasma levels of TNF-alpha increased, an Adipokine that creates an acute systemic phase of inflammation. An increase in leptin effecting the bodies regulation of fat storage and satiety sensation[12] became significant by the end of the fourth week of treatment.[6]
- ...mirtazapine-induced weight gain may contribute to worsening of obesity-related preexisting comorbidities (eg, hyperlipidemia, coronary artery disease, hyperglycemia) or lead to the development of comorbidities that are linked to obesity, such as type 2 diabetes.[7]

Drug Interaction risk:

- Tetracyclic/tricyclic (other form of antidepressant) are usually not taken together and can cause harmful effects by raising serotonin levels too much in the body.[10]

- High serotonin levels may lead to a 'medical condition' called Serotonin Syndrome. Serotonin Syndrome IS life threatening.[10] It involves rapid changes in vital signs (fever, body temperature, oscillations in blood pressure), sweating, nausea, vomiting, rigid muscles, myoclonus, agitation, delirium, seizures, and coma.

- A bit of patient info: If you experience muscle twitching, tremors, shivering or stiffness, fever, heavy sweating, heart palpitations, restlessness, confusion, agitation, trouble with coordination, or severe diarrhea contact your doctor right away. Your healthcare professionals may already be aware of this interaction and may be monitoring you for it.[10]

Interactions continued.....

- Wellbutrin: Increased risk of seizures.*Extreme caution is recommended. [11]
- Insulin/Oral hypoglycemic drugs have a greater than expected drop in blood sugar. [11]
- Thyroid disorders/heart disease may cause abnormal heart rhythms.[11]
- Liver disease-The metabolism by the liver may be impaired, with excessively high blood levels of the and increased side effects and toxic effects. [11]
- With beta blockers may cause increased depression and greater than expected drop in blood pressure. [11] *All BP meds are uneffective. BP is either too high or too low and unable to regulate. [11]
- M/C meds for pain like acetaminophen (Tylenol) and aspirin increase blood levels of mirtazapine by increasing demands on the liver.[11]
- Caffeine increases blood levels of mirtazapine. [11]

- started at 30mg then to 45mg. overall works well, still wake up periodically at night for brief periods. worst part is the weight gain. it is RIDICULOUS! no matter what I do it just won't stop.

- This drug did not help at all. Made me very drowsy, tired and contributed to anxiety. It did not solve my depression. I lost weight when it said I would gain it back. Not happy with this drug.

- Honestly I only took this drug for a few days. I stopped right away after I found myself not being able to sleep very well, waking from sleep or a nap with my heart pounding against my chest; being extremely short of breath. It gave me panic attacks, which only exacerbated my shortness of breath and heartbeat. I had read a great deal of the reviews on here, and thought Yay, I'm going to finally get some sleep. Not so at all. I was terribly disappointed, and being short of breath with my heart pounding prevented me from going anywhere. It was a chore to walk in my apartment without getting winded. Forget going out to the store or pharmacy. While I don't think I am in the majority, this situation happens to me quite a bit. If a drug makes others sleep, it keeps me awake. I plan on asking my psychiatrist to put me back on Nortriptyline during the day, and Trazadone at night. I'm disappointed, but cannot wait 1 - 4 weeks for this drug to take effect.

- Shaking, tremors, confusion

- It has helped with sleep, weight gain and anxiety.

- Taking 15 mg for nearly a year. I think it as helped my depression and I know it has helped my sleep. The only problem is weight gain and I am not eating differently than before, probably a little less.

- I have gone from using Effexor to using this drug and found it has not helped. I have had increased irritability, uncontrolled anger, sleeplessness.

CONCLUSION:

- The data has shown that Mirtazapine's stated effectiveness with low occurrence of adverse drug effects when compared with actual patient feedback is incongruent. All patient's have experienced numerous combinations of effects whether 'primary' or 'side', without any trend in the right direction.
- They are effective antidepressants but are used less often now due to their side effect profile.[9] As of October 29, 2014.

CHIROPRACTIC PIECE

- PubMed study: Use of an upper cervical technique in the case of a 23-year-old male patient with rapid-cycling bipolar disorder, sleep disorder, seizure disorder, neck and back pain, and migraine headaches. Symptoms began and persisted for 6 years after landing face first from a pole vaulting accident during which patient seeked care via many types of physicians. Thermography and spinographs were used in Chiropractic analysis in order to APPLE UC adjustments with CAUSE and measure for evidence of CORRECTION. Assessments at baseline, 2 months, and 4 months were conducted by the patient's neurologist. After 1 month of care, the patient reported an absence of seizures and manic episodes and improved sleep patterns. After 4 months of care, seizures and manic episodes remained absent and migraine headaches were reduced from 3 per week to 2 per month. After 7 months of care, the patient reported the complete absence of symptoms. Eighteen months later, the patient remains asymptomatic.[12]

- Long term removal of "subluxation" leaves the body with NOTHING MORE OF LESS THAN EVERYTHING it needs to function normally as innate sees fit. Removal of subluxation will restore function creating normal realistic urges and emotional health. In this way the patient will not be dependent upon any drug and victim of any side effect except being well.

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