# Olanzapine: Twitter versus FAERS Data

Whitney Stedman, Carly York, Samantha Walesky, Madeline Tutich

## Introduction

Our group studied the prescription drug Olanzapine to collect data on the adverse effects talked about on social media versus FAERS data when used in treating Schizophrenia.
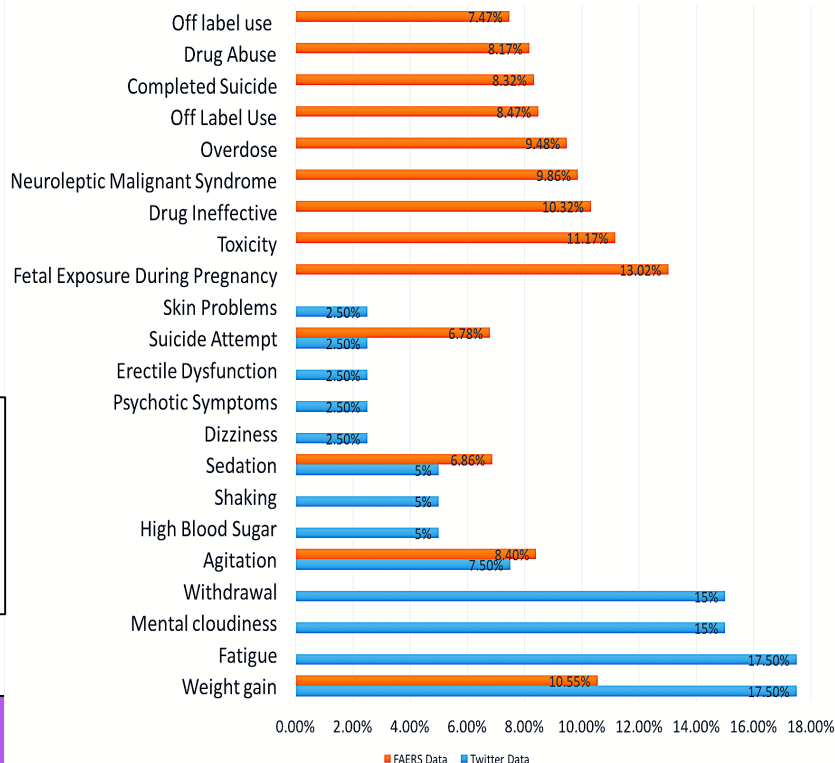
## Twitter Data

**Analysis of Tweets:**
- 37/251 contained ADEs (~15%) from 5/10/16 – 10/12/16
- 13 different ADEs were reported
- 3 tweets contained 2 ADEs

## Top 13 Twitter ADEs

| Event | Number of Events |
|---|---|
| Weight Increased | 7 |
| Fatigue | 7 |
| Mental Cloudiness | 6 |
| Withdrawal | 6 |
| Agitation | 3 |
| High Blood Sugar | 2 |
| Shaking | 2 |
| Sedation | 2 |
| Dizziness | 1 |
| Psychotic Symptom | 1 |
| Erectile Dysfunction | 1 |
| Suicide Attempt | 1 |
| Skin Problems | 1 |

### FAERS Data vs. Twitter Data: Adverse Reactions to Olanzapine



FAERS Data vs. Twitter Data: Adverse Reactions to Olanzapine

| Event | FAERS Data | Twitter Data |
|---|---|---|
| Off label use | 7.47% | |
| Drug Abuse | 8.17% | |
| Completed Suicide | 8.32% | |
| Off Label Use | 8.47% | |
| Overdose | 9.48% | |
| Neuroleptic Malignant Syndrome | 9.86% | |
| Drug Ineffective | 10.32% | |
| Toxicity | 11.17% | |
| Fetal Exposure During Pregnancy | 13.02% | |
| Skin Problems | | 2.50% |
| Suicide Attempt | 6.78% | 2.50% |
| Erectile Dysfunction | | 2.50% |
| Psychotic Symptoms | | 2.50% |
| Dizziness | | 2.50% |
| Sedation | 6.86% | 5% |
| Shaking | | 5% |
| High Blood Sugar | | 5% |
| Agitation | 8.40% | 7.50% |
| Withdrawal | | 15% |
| Mental cloudiness | | 15% |
| Fatigue | | 17.50% |
| Weight gain | 10.55% | 17.50% |

## Conclusions

- The top ADE (Weight Increased) from the Twitter data did not match the top ADE (Fetal Exposure during Pregnancy) from the FAERS data.
- Due to the smaller sample size, the top 13 ADEs for Twitter did not correlate with the FAERS top 13 ADEs
  - Only 4 ADEs were the same on both.
- Our FAERS data caused us to question Olanzapine as a good treatment drug due to the fact that 10.32% of patients with ADEs reported drug ineffectiveness.

## FAERS DATA

**Analysis of FAERS:**
- Of 1,298 entries for Olanzapine, there were 10,040 events reported.
- The top adverse drug reaction listed by FAERS was Fetal Exposure during Pregnancy which occurred in about 13% of patients experiencing ADEs from the dates 5/10/16 – 10/12/16.

## Top 13 FAERS ADEs

| Event | Number of Events |
|---|---|
| Fetal Exposure during Pregnancy | 169 |
| Toxicity to various agents | 145 |
| Weight Increased | 137 |
| Drug Ineffective | 134 |
| Neuroleptic Malignant Syndrome | 128 |
| Overdose | 123 |
| Congenital Anomaly | 110 |
| Agitation | 109 |
| Completed Suicide | 108 |
| Drug Abuse | 106 |
| Off Label Use | 97 |
| Sedation | 89 |
| Suicide Attempt | 88 |