Accutane: Twitter vs. FAERS Data

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Introduction

Accutane is an oral drug that is used to treat severe nodular acne. It is a form of Vitamin A that decreases the amount of oil secreted by oil glands. Accutane was selected to be studied because it is commonly used among teenagers, and that age group uses Twitter more than other generations to express their thoughts. The top 15 adverse events (ADE) from Twitter were compared with the top 15 adverse effects from the FDA Adverse Event Reporting System (FAERS).
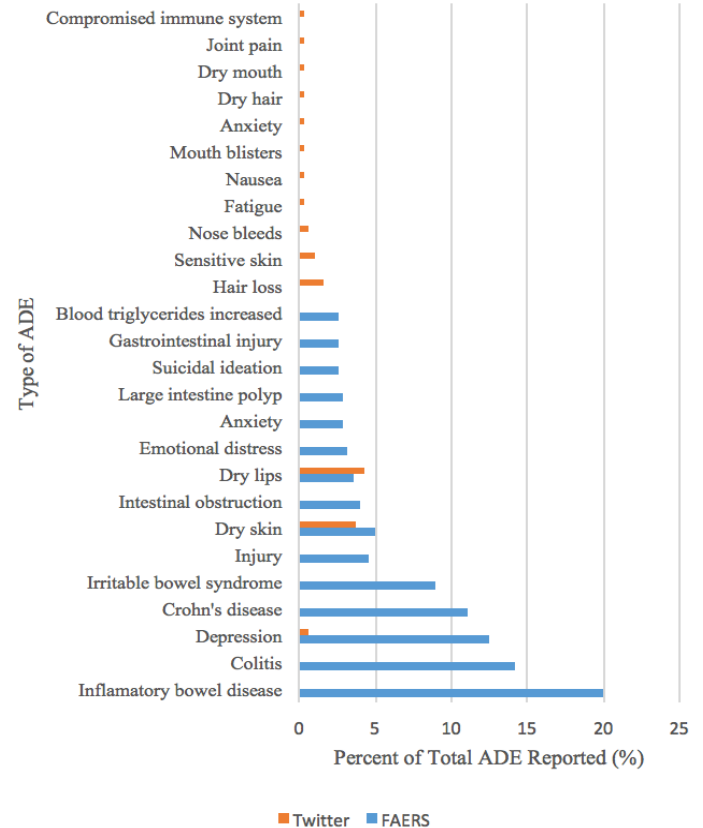
Conclusion

There were different adverse effects reported through FAERS and Twitter. Dry lips and dry skin were reported similarly among the two researched platforms. It is interesting that the most common ADE reported through Twitter, dry lips, is the 9th most common ADE reported through FAERS. This can be contributed to the fact that Twitter is public. Users may feel unwilling to share more serious or embarrassing ADEs, like irritable bowel syndrome or suicidal ideation. Overall, by comparing the two data sets, FAERS is a more reliable data source that shows the most common ADEs, while Twitter is an outlet for annoying, minor ADEs to be reported.

FAERS Data

The total number of ADEs reported to FAERS that were primarily attributed to Accutane was 13,052.

Twitter Data

- 300 tweets from 10/13/16 to 10/25/16 were randomly selected as a sample
- 14% (N=42) of the tweets contained at least one ADE
- 45 total ADEs reported
  - 6 tweets stated 2 ADEs

Top 15 ADEs Reported through FAERS		
Event	Number of Events	Percent of Total ADE Reported
Inflammatory bowel disease	2607	20.0%
Colitis ulcerative	1846	14.1%
Depression	1625	12.5%
Crohn's disease	1455	11.2 %
Irritable bowel syndrome	1169	9.0%
Injury	644	5.0%
Dry skin	533	3.8%
Intestinal obstruction	520	4.0%
Dry lips	460	3.5%
Emotional distress	406	3.1%
Anxiety	383	2.9%
Large intestine polyp	381	2.9%
Suicidal ideation	347	2.7%
Gastrointestinal injury	338	2.6%
Blood triglycerides increased	338	2.4%

Top 15 ADEs Reported on Twitter		
Event	Number of Events	Percent of Total ADE Reported
Dry lips	13	4.3%
Dry skin	11	3.7%
Hair loss	5	1.7%
Sensitive skin	3	1.0%
Depression	2	0.7%
Nose bleeds	2	0.7%
Fatigue	1	0.3%
Nausea	1	0.3%
Mouth blisters	1	0.3%
Anxiety	1	0.3%
Migraines	1	0.3%
Dry hair	1	0.3%
Dry mouth	1	0.3%
Joint pain	1	0.3%
Compromised immune system	1	0.3%

Adverse Drug Event Monitoring: Twitter vs. FAERS