

INTRODUCTION

Tamoxifen was selected because it is a common breast cancer drug for women battling breast cancer. Tamoxifen was frequently reported to the FDA Adverse Event Reporting System (FAERS). 300 tweets were randomly collected as a sample on 10/6/16 with tweets ranging from 12/6/13 to 10/5/16.

TWITTER DATA

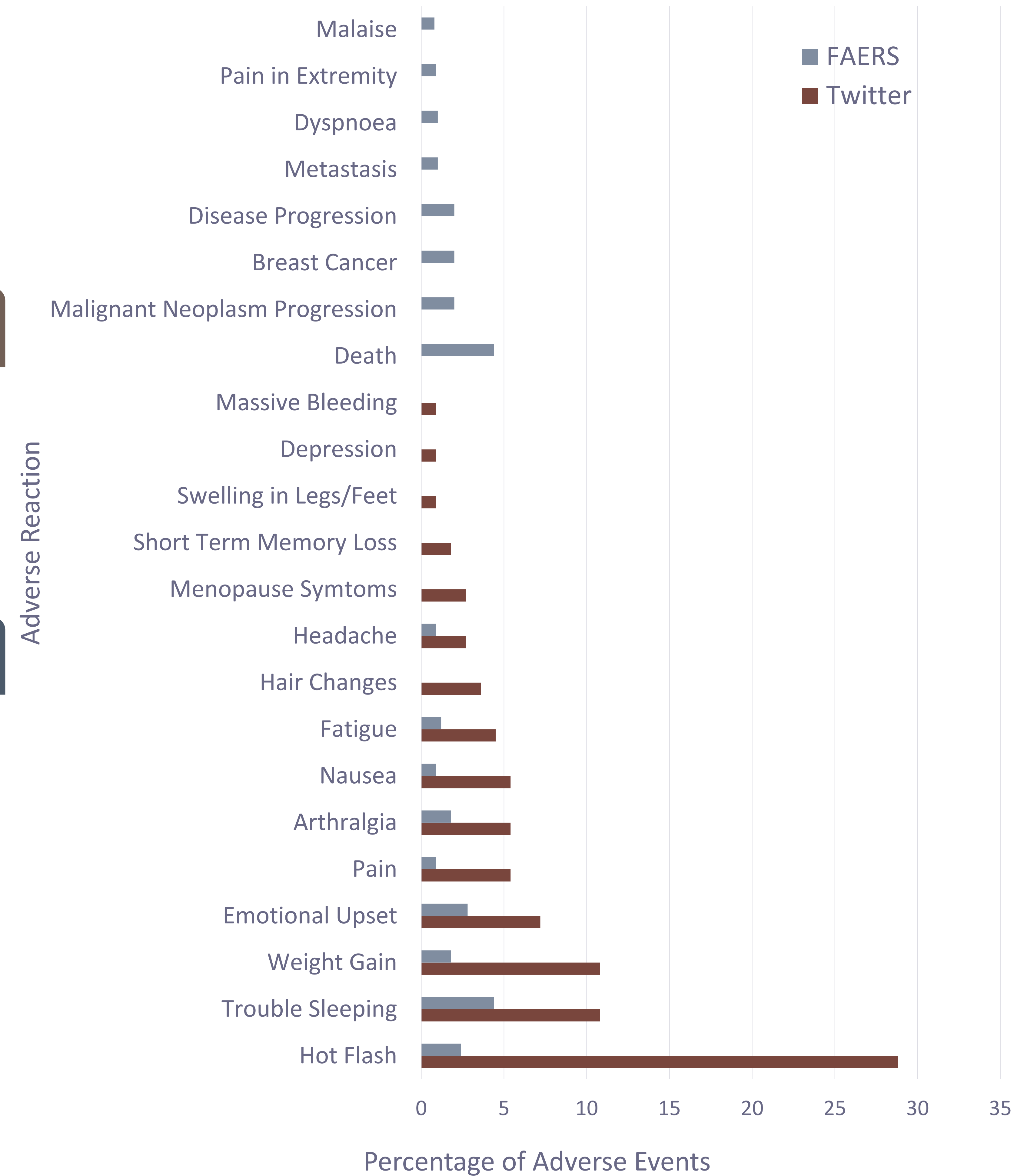
- 96/300 tweets mention an adverse event (32%)
- 111 adverse events were reported
 - 13 tweets expressed 2 adverse events
 - 1 tweet expressed 3 adverse events

TOP 15 TWITTER REACTIONS

Events	Number of Events
Hot Flash	32
Trouble Sleeping	12
Weight gain	12
Emotional Upset	8
Pain	6
Arthralgia	6
Nausea	6
Fatigue	5
Hair Changes*	4
Headache	3
Menopause Symptoms	3
Short term memory Loss	2
Swelling in Legs/Feet	1
Depression	1
Massive Bleeding	1

* Hair Changes refers to hair loss, or color change.

Percentage of Adverse Events: Twitter vs. FAERS



FAERS DATA

- Of 1271 entries on FAERS for Tamoxifen, there were 5411 events
- Of the entries FAERS received, only 1.29% of the events were hot flashes/night sweats
- Death was the top event occurring 4.38% of the 5411 events

CONCLUSION

- Twitter data showed that hot flashes are the most common adverse event to Tamoxifen, while FAERS reported that death was the most common adverse event.
- Twitter did not capture the same top 15 as FAERS, but this could be because the people tweeting can't necessarily tweet about their death and other adverse events reported by FAERS. Also, the twitter data has a smaller sample size and the tweets reported are primarily patient reported.
- It was interesting that the data from Twitter was so heavily focused on hot flashes while the FAERS data barely has any data for it. This is most likely because this side effect is not too severe, so many people would not report it to FAERS, but people tend to complain more on Twitter

TOP 15 FAERS REACTIONS

Events	Number of Events
Death	237
Malignant Neoplasm Regression	106
Breast Cancer	105
Arthralgia	95
Disease Progression	83
Metastasis	66
Fatigue	64
Hot Flash	50
Metastasis to Bone	58
Dyspnoea	57
Headache	50
Pain	49
Pain in Extremity	46
Nausea	46
Malaise	42