

# Utility of an EMR-Tool to Monitor Total Steroid Burden in Patients with Atopic Dermatitis and Asthma

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## Introduction

- Corticosteroids are judiciously used for various disease processes, especially in atopic disorders.
- Cutaneous, inhaled, intranasal and systemic corticosteroids (CS) are commonly prescribed for the treatment of atopic dermatitis (AD), asthma, and allergic rhinitis.
- Monitoring of the cumulative dose and effects of these steroids is considered cumbersome and its importance is often overlooked by both the patient and the practitioner. As such, both local and systemic side effects are often not monitored.<sup>1</sup>
- Evidence regarding the frequency of adverse effects and monitoring to identify and treat these adverse effects is scarce.<sup>2-3</sup>

## Objectives

- We sought to use a physician-friendly EMR-tool to increase documentation of total steroid burden (SB) in our patients with atopic dermatitis and asthma.
- We sought to increase education of our patients regarding cumulative steroid use in an effort to improve the overall delivery of healthcare and quality of life in this patient population.

## Design & Methods

**Study design:** Quality Improvement study via Pfizer Independent Grant for Learning and Change.

**Patient population:** 99 patient (pediatric and adult) encounters for atopic dermatitis and 64 patient (pediatric and adult) encounters for asthma.

### Data Collection included:

- Corticosteroid type
- Potency
- Frequency of use
- Side effects
- Interventions made
- Patient counseling

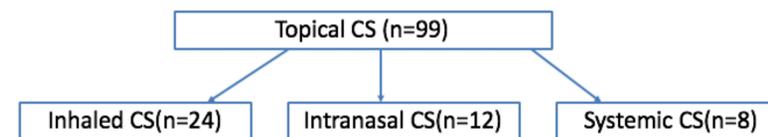
A physician satisfaction survey was used at regular intervals to measure physician satisfaction, educational efficacy, and impact on length of patient visit.

## Results

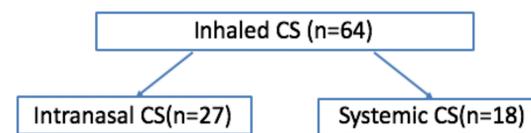
### Demographics

- Age** – average = 31 years (AD), 56 years (asthma)
- Female/Male** – 53% female, 47% male (AD)  
63% female, 37% male (asthma)

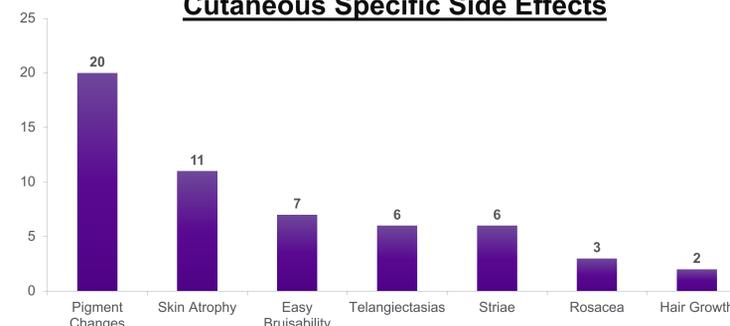
### Concurrent CS with Cutaneous CS



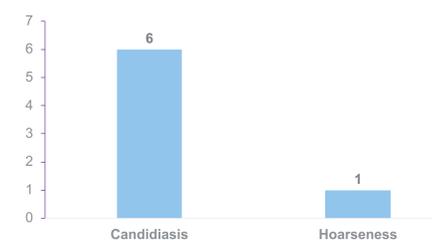
### Concurrent CS with Inhaled CS



### Cutaneous Specific Side Effects



### Inhaled Specific Side Effects



CS Burden Intervention	Frequency (AD)	Frequency (Asthma)
Decrease Dose	10% (10/99)	4.7% (3/64)
Increase Dose (to optimize treatment)	11% (11/99)	9.4% (6/64)
Decrease Potency	3% (3/99)	0% (0/64)
Discontinue	15% (15/99)	1.6% (1/64)
No Change/Monitor	51% (50/99)	84.4% (54/64)

- AD Encounters:** In patients with one or more side effects, 56% had a dose adjustment (decrease dose/potency/discontinue). In patients with NO side effects, 21% had a dose adjustment (p=0.0012\*)
- Asthma Encounters:** In patients with one or more side effects, 25% had a dose adjustment. In patients with NO side effects, 75% had a dose adjustment (p=0.3783).

## Results Continued

Physician Satisfaction with EMR-Tool	Impacts on Visit Time
(1= extremely satisfied, 2= satisfied, 3=dissatisfied, 4=extremely dissatisfied)	(1=decreased, 2=same, 3=<10 additional minutes, 4=>10 additional minutes)
Quarter 1= 2	Quarter 1=3.125
Quarter 2=1.835	Quarter 2=2.875
Quarter 3=1.875	Quarter 3=3
Quarter 4=1.33	Quarter 4=2.67

## Conclusions

- Utilization of an EMR monitoring tool is useful in identifying total steroid burden in patients.
- The regular and consistent use of our EMR tool at each patient encounter can identify side effects and positively modify physician practice thereby increasing patient safety.
- Physician survey results demonstrated improved satisfaction. Completion of EMR tool minimally affected visit time and efficiency increased over time.
- Our study adds to the current need of corticosteroid monitoring in patients with atopic dermatitis and asthma, especially those with other corticosteroid therapies.

## Discussion

- This EMR tool can be extrapolated for use in other patient populations treated with corticosteroids.
- Physician education is integral to the safe use of corticosteroids, a widely used medication class.
- Integration of this tool in our office has, with time, become a seamless part of our assessment of AD and asthma patients, and has led to optimization of patient care.
- Using our EMR-tool helps facilitate the identification and tracking of total SB in patients, associated side effects and leads to meaningful intervention.

## References

<sup>1</sup>Gupta R, Fonacier LS. Adverse effects of non-systemic steroids (inhaled, intranasal, and cutaneous): a review of the literature and suggested monitoring tool. *Curr Allergy Asthma Rep.* 2016;16:44.  
<sup>2</sup>Staab D, von Rueden U, Kehrt R, et al. Evaluation of a parental training program for the management of childhood atopic dermatitis. *Pediatr Allergy Immunol.* 2002 Apr;13(2):84-90.  
<sup>3</sup>Ahrens B, Staab D. Extended implementation of educational programs for atopic dermatitis in childhood. *Pediatr Allergy Immunol.* 2015 May;26(3):190-96.