

Recurrent Angioedema

Experience at a Tertiary Care Urban Medical Center

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ABSTRACT

Objective

To determine the demographics, presentation, management, and outcomes of patients with recurrent angioedema. To compare the findings to patients with ACE inhibitor related angioedema.

Methods

Retrospective case series with chart review of patients who presented to Temple University Hospital between January 2010 and December 2017 with two or more episodes of angioedema. Excluded were patients with anaphylactic reaction, medication induced angioedema, or angioedema secondary to an infectious etiology. A group of 88 patients who presented during the same time period with ACE inhibitor related angioedema was used as a control. Statistical analysis was conducted using a two-tailed Fisher exact test and a multivariate logistical regression model to determine significant associations.

Results

Ninety-one patients were identified, of whom 61 met the inclusion criteria. Fifty percent were Caucasian or Hispanic. The average number of episodes was 3.5 (range: 2 - 23). The lips and tongue were the most commonly affected sites (37% and 39%). The larynx and floor of mouth were least likely to be involved (7% and 6%). Only 1 patient was found to have C1 esterase inhibitor deficiency. Twenty-eight percent of patients had asthma, allergic rhinitis, food allergies, or atopic dermatitis. Only 11% of episodes required airway intervention. No patients required airway intervention after transfer from the Emergency Department.

Conclusions

Recurrent angioedema was primarily idiopathic and had a less severe presentation and course than patients with ACE inhibitor related disease. Atopy is common.

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INTRODUCTION

- Angioedema
 - Quincke 1882 – first description
 - Osler1888 – Hereditary angioedema
- Basics
 - Heterogenous, several etiologies
 - Paroxysmal, generally self resolving
 - Mucosal swelling, vascular leakage
 - May involve airway swelling -> intubation
- Primary vs Secondary
- Hereditary vs Acquired
- Single vs Recurrent episodes

Hereditary	Acquired
C1-INH	ACE-inhibitor
Factor XII	C1-INH acquired deficiency
Unknown	Idiopathic

METHODS

- IRB approval
- Retrospective review Jan 2010 – Dec 2017
- Inclusion criteria
 - 2 or more episodes in timeframe
- Exclusion criteria
 - Anaphylaxis or repeated ACE use
 - Incorrectly coded or insufficient data
- Control group – ACE-inhibitor related angioedema in same time period
- Variables: Patient demographics, medical comorbidities, history of atopic conditions
- Statistical analysis: 2 tailed Fisher Exact test

	Recurrent angioedema (%)	ACE inhibitor (%)	P value
Airway Intervention			
Intubation	22 (10)	28 (31)	<0.001
Surgical Airway	2 (1)	0 (0)	1
Airway intervention in ICU	0 (0)	7 (25)	<0.001
Disposition from ED			
Discharge	102 (47)	34 (39)	0.2
ICU	76 (35)	46 (52)	0.006
Hospital floor	39 (18)	8 (9)	0.055

Table 1: Outcomes of patients with recurrent angioedema and ACE Inhibitor Angioedema. Patients with recurrent angioedema had less intubations compared to control group. All airway interventions occurred early in ED. Fewer ICU admissions in recurrent angioedema group.

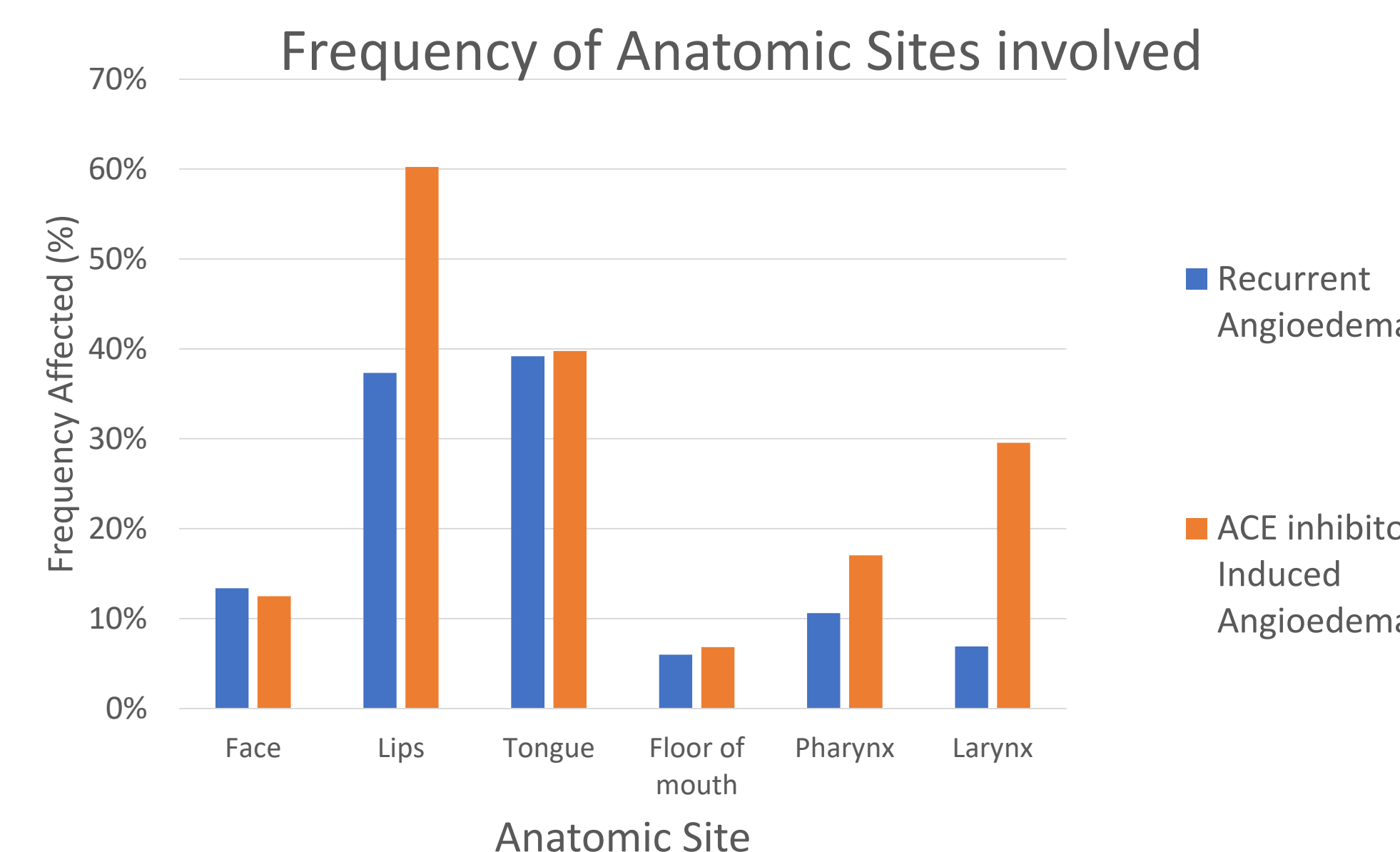


Figure 1: Frequency of Anatomic Sites Involved. Blue is recurrent angioedema episodes. Orange is ACE inhibitor induced angioedema (control group). The lips and larynx groups are significantly different, P val < 0.05.

	Airway intervention	No Airway Intervention	P value
N per group	24	193	
Face	0	29	0.998
Lips	4	77	0.786
Tongue	16	69	0.030
Floor of mouth	3	10	0.731
Pharynx	7	16	0.011
Larynx	4	11	0.510

Table 2: Physical exam predictors of airway intervention in recurrent angioedema. Patients with tongue and pharyngeal swelling are more likely to require airway intervention. Laryngeal swelling is likely not significant due to the lower relative occurrence of this anatomic location.

RESULTS

- Recurrent episodes 217 (3.5 per patient)
 - 156 subsequent episodes
- Mean subsites involved 1.4
- Demographics
 - Male-female 2:3
 - Caucasian 27%, Hispanic 23%, African American 50% (91% in control group)
 - Comorbidities: higher amount of allergies compared to ACE-I group
- Subsequent episodes – 65% on same subsite, fewer airway interventions
 - 52% same outcome, 35% with worse outcome compared to initial episode
- Outcomes – table 1
 - Recurrent angioedema fewer airway interventions compared to ACE-I group
 - All intubations in ED whereas 25% of intubations in ICU for ACE-I (progress later)
 - Fewer ICU admissions

CONCLUSIONS

- Higher percentage of Caucasian and Hispanic interventions
- More allergic rhinitis or food allergies
- Less lip and laryngeal involvement
- Fewer airway interventions
- Symptoms rarely progress
- Recur at same subsite
- Subsequent episodes rarely worse

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