PATHOLOGY

The Burden of Facial Cellulitis Leading to Inpatient Hospitalization

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Purpose: The purpose of the present study was to present nationally representative estimates of hospitalizations primarily attributed to facial cellulitis and to conduct an exploratory analysis on identifying factors associated with outcomes, such as hospital charges, length of stay (LOS), disposition status, and occurrence of infectious complications.

Materials and Methods: The present study is a retrospective analysis of the Nationwide Inpatient Sample (NIS) for 2012 and 2013. The *International Classification of Diseases, Ninth Revision, Clinical Modification* diagnosis code of "682.0" in the primary diagnosis field of NIS (reason for hospitalization) was used to identify cases with facial cellulitis. All patients at least 18 years old who were hospitalized for facial cellulitis were included. Outcome variables examined in the present study were hospital charges, LOS, disposition status, and occurrence of infectious complications. Descriptive statistics and a multivariable linear regression model were used to examine association between independent variables and patient disposition and infectious complications.

Results: In 2012 and 2013, 74,480 hospitalizations involved facial cellulitis in adults at least 18 years old in the United States. Most were women (mean age, 47.5 yr). Most patients were routinely discharged home. Age was associated with an increase in odds of discharge to another facility. Variables associated with decreased odds of bacterial infections were age and black or Hispanic race. Women with at least 1 comorbidity had higher odds of mycoses. Statistically relevant predictors of longer than average LOS were age, race, insurance, presence of sepsis, and location.

Conclusions: This study presented nationally representative estimates of hospitalizations attributed primarily to facial cellulitis in the adult population in the United States in 2012 and 2013. The presence of a comorbid condition predicted worse outcomes. Public health efforts should focus on targeting high-risk patients and providing monitoring or early treatment of face cellulitis.

J Oral Maxillofac Surg ■*:1-12, 2017*

Facial cellulitis is an infection of the skin and underlying soft tissues. The etiology can be odontogenic or nonodontogenic based on the source of infection. Odontogenic cellulitis originates from dentition and nonodontogenic cellulitis typically arises from trauma, sinus pathology, skin infections, or idiopathic causes.[1-3] Potential pathogens are a virus or bacteria (most commonly, *Staphylococcus* or *Streptococcus* species).

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Conflict of Interest Disclosures: None of the authors have any relevant financial relationship(s) with a commercial interest.

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Received December 30 2016

Accepted January 26 2017

0278-2391/17/30117-9

http://dx.doi.org/10.1016/j.joms.2017.01.032

Table 1. CHARACTERISTICS OF ADULTS (≥18 YR OLD) WHO HAD FACIAL CELLULITIS IN THE UNITED STATES, 2012 THROUGH 2013

Characteristic	Response	N = 74,480	%
Gender	Men	33,590	45.1
	Women	40,885	54.9
Race	White	51,230	68.8
	Black	9,115	12.2
	Hispanic	6,830	9.2
	Asian or Pacific Islander	1,140	1.5
	Native American	605	0.8
	Other races	1,965	2.6
	Missing	3,595	4.8
Insurance status	Medicare	19,400	26.1
	Medicaid	13,325	17.9
	Private	23,995	32.3
	Uninsured	14,080	19.0
	Other insurance	3,495	4.7
Household income quartiles	1	24,275	33.4
	2	19,245	26.5
	3	16,010	22.0
	4	13,180	18.1
Disposition status	Routine discharge	64,130	86.1
	Transfer to short-term hospital	895	1.2
	Transfer to long-term facility (skilled nursing facility, intermediate care facility, another type of facility)	3,405	4.6
	Home health care	4,125	5.5
	Against medical advice	1,760	2.4
	Died in hospital	115	0.2
	Discharged alive, destination unknown	DS	DS
Type of admission	Non-elective	68,830	92.7
	Elective	5,400	7.3
Complication	Any complication	22,630	30.4
	Infections	22,270	29.9
	Decubitus ulcer	360	0.5
	Sepsis	1,265	1.7
	Bacterial infections	20,480	27.5
	Mycoses	1,520	2.0
	Wound	45	0.06
	Hemorrhage	70	0.09
	Other infections	60	0.08
	Iatrogenic	85	0.1
	Vascular	50	0.07
	Urinary	DS	DS
	Digestive	0	0
	Respiratory	DS	DS
	Nervous	DS	DS
	Cardiac	DS	DS
	Postoperative pneumonia	625	0.8
Comorbidity	0	18,765	25.2
	1	17,815	23.9
	2	15,260	20.5
	3	10,500	14.1
	4	6,270	8.4
	5	3,270	4.4
	6	1,655	2.2
	7	625	0.8
	8	240	0.3