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original article

A CLINICAL STUDY ON LOWER LIMB CELLULITIS IN NON-DIABETIC PATIENTS

Dr. Asit V Patel Mail ID: drasitpatel@gmail.com , Prof & Head Dr. Suyash Singodiya
Senior Resident

Dr. Poorn V Pandya First year Resident: poornpandya96@gmail.com

Dr. Ashwin P Godbole: Second Year Resident Mail ID: ashwingodbole@yahoo.in

Dr. Shreosi P Sarkar: Third Year Resident Mail ID: shreosimam1a@gmail.com ,

Dr. Vishrut Kaushik MBBS

Department of General Surgery

AMCMET Medical college & LG hospital Maninagar Ahmedabad Pin 380008

Corresponding Author) : Dr. Poorn V Pandya : poornpandya96@gmail.com

ABSTRACT

Background:

Lower limbs are commonly involved in cellulitis as they are more susceptible to injuries. This study analyses various causes and risk factors for cellulitis in non-diabetics.

Method: This retrospective observational study was conducted at department of surgery, AMCMET medical college and Sheth L.G. Hospital, Mani Nagar, Ahmedabad and included 30 nondiabetic patients. The severity of cellulitis was graded according to CREST guidelines. Demographics, Risk factors, grades, management and treatment outcomes were recorded and analyzed.

Results: Cellulitis was more common in males and in young adults. It was more unilaterally and resulted more commonly by trauma. Severe grades needed surgical intervention.

Conclusions: Non diabetic patients with lower limb cellulitis can also result in severe morbid consequences but in the absence of co-morbid illness, they usually recover with minimal residual disabilities.

Keywords: cellulitis, non-diabetics, trauma, CREST guidelines.

INTRODUCTION: Cellulitis (sel-u-LIE-tis) is a common, potentially serious bacterial skin infection. The affected skin appears swollen and red and is typically painful and warm to the touch¹. Cellulitis usually affects the skin on the lower legs, but it can occur in the face, arms and other areas⁴. It occurs when a crack or break in the skin allows bacteria to enter³. Left untreated, the infection can spread to lymph nodes and bloodstream and rapidly become life-threatening. It isn't usually spread from person to person. The common symptoms and signs with which the patient presents are erythema, swelling, pain, fever, blisters, local part warmth and tenderness. Common underlying etiology is the bacterial infection, most commonly streptococcus and staphylococcus, which enter through a crack or break in the skin². More often, diabetic patients are susceptible population for developing cellulitis due to underlying vasculopathy, neuropathy and hyperglycemia⁵, but there is a section of non-diabetic population which is prone to develop cellulitis due to various other etiological factors⁶. There is an increasing trend of non-diabetic patients developing cellulitis in which the progression of disease, management, complications and outcome differs.⁷

METHODOLOGY: This retrospective observational study includes 30 patients who were admitted in Sheth Lallubhai Gordhandas General Hospital, Ahmedabad under the Department of General Surgery from 1st July 2018 to 28th February 2019. Non diabetic patients diagnosed with lower limb cellulitis who were above 18 years of age and were willing to give informed consent were included. A predesigned proforma was used to collect information for individual case. Relevant and feasible blood and radiological investigations were done and accordingly severity grading and management according to CREST guidelines. Class I patients will not have signs of systemic toxicity or any comorbidities and are routinely treated with oral antibiotics in the medical or surgical outpatient departments. Class II patients either have a systemic illness, in the form of fever due to the infective focus or have some co-morbidity like a Peripheral vascular disease, chronic venous insufficiency or morbid obesity which can affect the resolution of infection. Class III patients have either significant systemic problems or limb-threatening infection due to vascular compromise and the patient presents with edema, blistering and devitalizing changes in the site or with unstable comorbidities. Class IV patients include those with severe life-threatening infections like necrotizing fasciitis or cellulitis associated with sepsis syndrome. Cellulitis occurring in the immunocompromised individuals is also included under this category.

RESULT

We have done a retrospective study of 30 cases of lower limb cellulitis who were nondiabetics. In these patients we studied the etiology, age factor, extent and grading of cellulitis, any associated comorbidities. Based on these factors and radiological and pathological investigations, the cases were classified as per CREST Guidelines for cellulitis and management was done as per the classes. From the study it is inferred that most common cause of lower limb cellulitis in non-diabetic patients is trauma which accounts for 56%, followed by unknown, insect/animal bite and skin disease which accounts for 20, 17 and 7 % respectively.

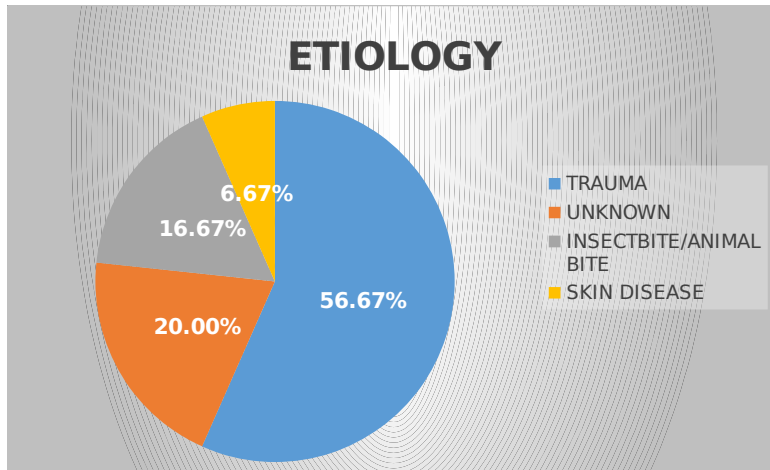


figure 1

The incidence of lower limb cellulitis in non-diabetics is maximum in young adults (18-40 years) followed by middle age (40-60 years) and elderly (>60 years)

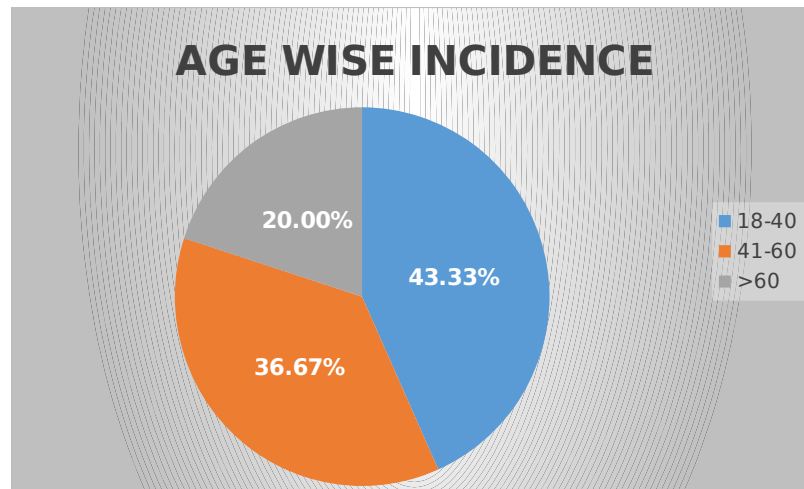


figure 2

Most of these cases were of Class II and were treated conservatively while few needed surgeries in form of debridement, fasciotomy which was followed by split thickness skin grafting with success.

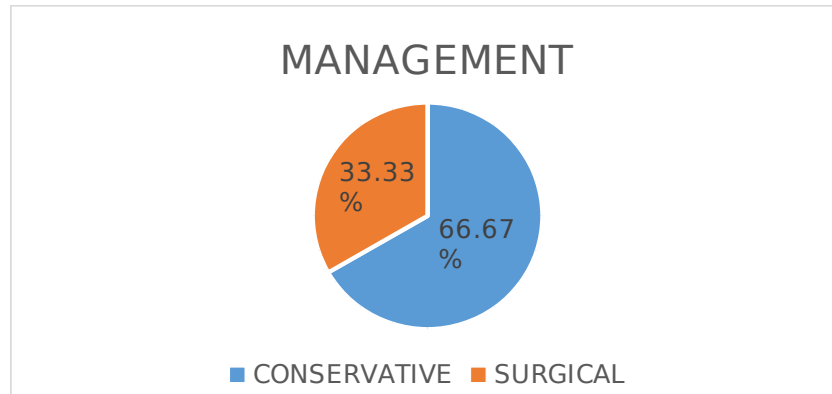


figure 3

Out of 10 patients who underwent debridement/fasciotomy, 4 were planned for STG which was successful while others were managed by regular dressing.

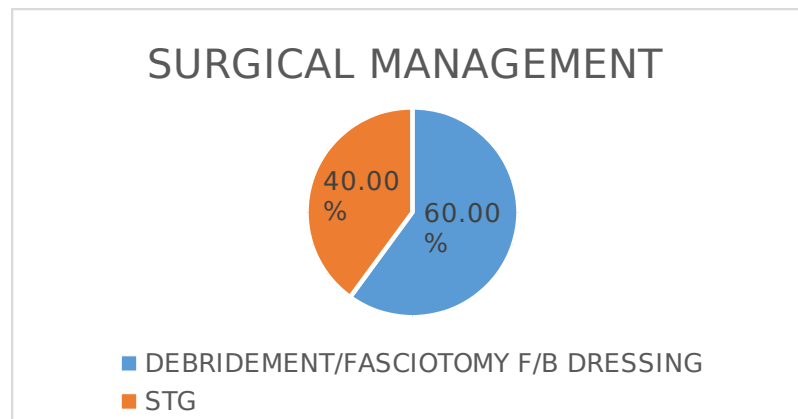


figure 4

DISCUSSION

Cellulitis is more common in patients with diabetes and its comorbidities but there are nondiabetic patients having lower limb cellulitis who have better prognosis than diabetics.⁸ In our study most common cause of lower limb cellulitis in nondiabetics was trauma (56%) while in study (Adimoolam E et al. IntSurg J. 2018 Jun;5(6):2336-2339) most common cause was animal bite (21%) followed by trauma (17%).⁹ In our study most of the cases were grade 2 (66%) where as in the study (Adimoolam E et al. IntSurg J. 2018 Jun;5(6):2336-2339) it was grade 3 (58%). In the study (Adimoolam E et al. IntSurg J. 2018 Jun;5(6):2336-2339) only 24% patients were managed conservatively and 76% required surgical intervention while in our study 66% patients were managed conservatively.¹⁰

CONCLUSION

From this retrospective study of 30 cases of lower limb cellulitis in non-diabetic patients, we conclude the following TRAUMA is the most common cause of lower limb cellulitis in non-

diabetics, young adults of 18-40 years of age are most commonly affected which can be due to trauma at work place or transit. Most of these patients are managed very well conservatively successfully. Surgical intervention if needed is also uneventful if no other comorbidities are associated. Nondiabetic elderly patients have to be motivated to take care of their feet as the diabetic patients, as neglect of minor trauma or bites can lead to morbid illness necessitating major treatments like STG.

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