

A Retrospective Analysis of Fournier's Gangrene at a Tertiary Government Hospital in the Philippines

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Background: Fournier's gangrene is a serious illness which involves the external genitalia and perineum. It is rare but a life-threatening form of necrotizing fasciitis. Despite aggressive treatment, the mortality rate is still high. In this study, the authors will discuss the risk factors and mortality of the said disease.

Methods: This is a descriptive retrospective study of patients with Fournier's gangrene treated at a tertiary government hospital in the Philippines between January 2014 to December 2016.

Results: The data from a total of 16 patients (M:F = 15:1) were analyzed. The most number of patients were in the 5th decade of life (range 17-75 years). The most commonly-associated morbidity was diabetes mellitus (50%). Bacterial culture results were obtained in only 15 (93.7%) patients. Of these, 13 (86.6%) had polymicrobial bacterial growth while 2 (13.3%) had monomicrobial bacterial growth. *Escherichia coli* (93.3%) was the most frequent bacterial organism isolated. All the microorganisms isolated showed high resistance to commonly-used antibiotics except for Meropenem, Piperacillin-Tazobactam, and Ceftriaxone. All patients were treated with broad-spectrum antibiotics, and emergent surgical debridement. The median length of hospital stay (LOS) was 14.3 days and mortality rate was 6.25 %.

Conclusion: Fournier's gangrene is still a grave disease that can be treated by determining the cause of infection and prompt surgical treatment is needed to improve patient outcome

Keywords: Fournier's gangrene, patient outcome

Introduction

Fournier's gangrene (FG) is a rapidly spreading necrotizing fasciitis affecting the perineum, scrotum, and penis in men, but it has also been described in women and children.¹ It can spread to the anorectal area, thighs, and abdominal wall. It was first reported by Baurienne in 1764, however, it was a French dermatologist, Dr. Jean Alfred Fournier, who described the disease in detail in 1883. It was characterized by an abrupt onset of a rapidly fulminating genital gangrene of idiopathic origin

in previously healthy young patients that resulted in gangrenous destruction of the genitalia.² Table 1 lists the predisposing risk factors for developing Fournier's gangrene. It is estimated that 50-70 percent of patients with Fournier's gangrene have diabetes.³ Despite progressive treatments, it is still considered morbid with high mortality rate. This study consists of data gathered from records of patients who were diagnosed with Fournier's gangrene. The objective is to determine the mortality rate in this tertiary government hospital and identify the predisposing factors associated with the disease.

Table 1. Risk factors for developing Fournier's gangrene.

Alcoholism
Diabetes
Malnutrition
Advanced Age
Peripheral Vascular Disease
Cardiovascular Disease
Morbid Obesity
Renal/Hepatic Failure
Active Cancer/Chemotherapy
HIV
Anorectal Conditions

Patients and Methods

This is a descriptive, retrospective study of patients admitted at the East Avenue Medical Center (EAMC), a tertiary government hospital in the Philippines, from January 2014 to December 2016. All patients included were diagnosed with Fournier's gangrene. The diagnosis was based on patient's history and physical examination done by the attending resident of the hospital. Data collected included age, gender, risk factors, culture and sensitivity, presentation of the onset by history, medications given, number of operations (debridement) done on the patient, mortality and hospital stay. Presentation at the onset of the disease was measured by days whether 'Early' (<48 hours) or 'Late' (≥48 hours). Hospital stay is measured by number of days the patient was confined in the hospital. Culture was determined whether it is polymicrobial or monomicrobial. Antibiotic of choice was given based on the sensitivity of the cultured specimen and availability of the antibiotic. Mortality is defined as death related to the disease during the patient's hospital stay.

Results

A total of 16 patients were recorded in EAMC from January 2014 to December 2016. There were 15 males and 1 female. All of them came from

low socio-economic status, as determined by hospital social service. Most patients were in their 5th decade of life with a range of 17 to 75 years. The most commonly associated risk was diabetes mellitus (50%). Other predisposing factors included rectal carcinoma. The disease is often slow-progressing and mostly noticed more than one week from time of consultation. Three of the patients recorded had two operations. Culture obtained was usually polymicrobial (86.6%) and the most commonly isolated microorganism was *Escherichia coli* (93.3%). Empiric regimen given at the time of admission was Piperacillin-Tazobactam. Most of the time, antibiotics were shifted and mostly were broad spectrum antibiotics, based from the culture and sensitivity of the specimen. Most commonly used were Meropenem, Piperacillin-tazobactam, and Ceftriaxone. One patient died due to multi-organ failure, giving a mortality rate of 6.25%. The overall hospital stay ranged from 2 to 52 days with a median of 15 days.

Discussion

Fournier's gangrene is a serious, debilitating disease that affects the perineal area. It is also known as idiopathic gangrene of the scrotum, streptococcal scrotal gangrene, perineal phlegmon, and spontaneous fulminant gangrene of the scrotum.² Commonly affected were males compared to females. This disease is fatal affecting the genitalia and perineal regions and caused by polymicrobial infection. Based on the history taken from the patients, the most commonly affected were those from the low socio-economic class as determined by the hospital's social service. Poor health hygiene and lack of resources to manage co-morbid diseases such as diabetes were noted in this population.

Outcome is better if the interval between the onset of signs and symptoms and treatment is shorter.⁵ Most cases in this study presented more than a week before treatment was given. This was also noted in other developing countries.¹ This treatment delay may be due to inaccessibility to a health facility and patients do not have health insurance. Fortunately, most of the patients in the present study survived after receiving proper

treatment. *Escherichia coli* is still the most common microorganism isolated. Medications⁵ given are mostly carbapenems or 3rd generation cephalosporin alongside with debridement. Length of hospital stay varies and it becomes a concern if patients stay longer due to increasing morbidity and treatment costs especially to these patients who do not have financial capacity and carry a heavy burden to their loved ones. On follow-up, these patients, based on physical examination were noted to have good wound healing and the testes were not affected due to their independent blood supply.

Conclusion

Immediate identification of this disease and prompt treatment may decrease the rate of mortality. Good surgical debridement along with proper antibiotics yielded good results and better outcome for these patients.

References

1. Eke N. Fournier's gangrene. A review of 1726 cases. *Br J Surg* 2002; 87(6): 718-28.
2. Wein A, et al. Other Infections. Fournier's Gangrene. *Campbell-Walsh Urology, Eleventh Edition*. Elsevier. Philadelphia Pennsylvania. 2016, p. 302.
3. García A, et al. Fournier's gangrene: Analysis of prognostic variables in 34 patients. *Eur J Trauma Emerg Surg* 2011; 37(2): 141-5.
4. McCormack M. Fournier's gangrene: A retrospective analysis of 26 cases in a Canadian hospital and literature review. *Canadian Urol Assoc J* 2015; 9(5-6). doi: 10.5489/cuaj.2445.
5. Yilmazlar T. Fournier's gangrene: Review of 120 patients and predictors of mortality. *Turkish J Trauma Emerg Surg* 2014; 20(5):333-7. doi: 10.5505/tjtes.2014.06870