

A Case Report On Gas Gangrene with Diabetic Foot Ulcer of Left Limb Toe Amputation: Using Antibiotics and Insulin Therapy

S. Sunil Kumar*, M. Keerthana, S. Irfan

*Pharm D student, Santhiram College of Pharmacy, Nandyal, Kurnool Dt. AP, India – 518501

Abstract: *Diabetic foot ulcers were mainly caused due to the microbial infection. In diabetic patients the microorganisms undergo the process of feeding the sugar & affecting the surrounding tissues damaging the foot. Gangrene occurs due to the reduced blood supply in the body tissues which leads to necrosis. This condition is mainly arises during infectious state & majorly in diabetic patients. In this case study the patient was having diabetic foot with gas gangrene a surgical amputation was performed to prevent the spread of infection to other tissues. The patient developed a small bleb over the dorsal aspect of the left lower limb on the 5th toe which eventually get ruptured & later developed discoloration of the 5th toe. The patient was treated with several antibiotics, insulin therapy & certain dressings to reduce the infection & healing of the wound.*

Keywords: Amputation, Epithelization, angiogenesis, devastating, cellulitis

1. Introduction

Gas gangrene is an uncommon but potentially it prevent the diabetic foot infection, clinically diabetes is associated with various complications & reduced the quality of life of the patient. The major foot complications like cellulitis, ulceration & gas gangrene shows different clinical conditions among them^[1]. The patients with gas gangrene follows widely the concept of auto amputation^[2]. In this case the surgical amputation was done to the patient which helps in reliefment & improves the quality of life of the patient^[3]. There are many complications affecting the person with diabetes none or more devastating than those complications involving the foot^[4]. These researches indicates that both diabetic foot & gas gangrene condition is due to the reduced blood supply to the tissues that leads to necrosis secondary with diabetes & other certain injuries. In this case the patient was having diabetes^[5], this may cause long-term hospitalization & may risk to the amputation if the infection is aggressively progressed^[6]. We are reporting that diabetic foot with gas gangrene was treated with several antibiotics & insulin therapy was successfully received & discharged after 1 month 22 days.

2. Case Report

A 35 yrs. old male patient with type II DM was reported at the emergency department on 18th April 2019 with a small bleb over the left foot. Additionally he had some inflammatory signs around the site of the wound. The bleb which eventually get ruptured & later he developed a discoloration of the 5th toe of the left foot. The empirical Antibiotic therapy was started without knowing the microbial infection. Microbial culture test was performed that reveals positive for staphylococcus aureus bacteria.

The patient was got admitted in the general surgery ward for the wound care, where the serious discharge was observed from the bleb. Which it got ruptured & forms the discoloration of the 4th & 5th toe at the left foot. The

infected toes get amputated which relieves & improves the quality of life of the patient for the better outcomes.

The microorganisms are sensitive to cefixime, sulbactam, ceftriaxone & metranidazole. Insulin therapy like injection Human Actrapid was provided to the patient in high dose to control the sugar levels in the blood. In the condition of Gas gangrene in the diabetic foot, the wound healing is a time taking process to overcome this amputation was done to the patient, where no progression on recurrent attack of the infection is seen.

3. Discussion

Gas gangrene is a bacterial infection that produces gas in the tissues which requires medical & surgical emergency. Diabetes is also associated with various complications & reduced the quality of life of patients. In this study we observed that in gas gangrene patient due to the tissue necrosis & gets shrunken & blackened and finally it is detached, where the surgical amputation was performed to the 4th & 5th toe of the left leg. Practicing regular exercise & consuming healthy diet may reduce the risk of gangrene occurrence among diabetes patients^[7]. Proper foot care should be taken to avoid wearing tight shoes & poor control over diabetes^[8]. In this case the primary role is to control the hyperglycemia i.e. increased sugar levels in the blood by providing and hypoglycemic agents & insulin injections. Antibiotics used to treat the extensive wound healing like cefixime, sulbactam, ceftriaxone & metranidazole a combination for the treatment of diabetic foot with gas gangrene, this combination cured the infection within 1 month 22 days and follow up of the study without any inflammatory signs. Diabetic foot with gas gangrene may include a various metabolic, vascular & neuropathy factors^[9].

In a case where diabetic patients with gas gangrene, ischemia of the lower limb was commonly seen which results in discoloration of the 4th & 5th toes numbness and tissue necrosis of the affected region got amputated^[10, 11].

^{12]}. Hence the insulin therapy & suitable antibiotics are preferable for this type of condition.



Left foot 4th & 5th toe got amputated during treatment



Wound healing during our observational study in the prognosis of the treatment

4. Conclusion

In this exploratory clinical studies it proves that efficacy & safety of the Antibiotics along with insulin therapy in the surgical amputation was provided in combination to achieve wound healing process with in short period of time and we observed the surface area of the wound has been reduced due to epithelialization and angiogenesis.

The results need to be further confirmed in large randomized control clinical trials which is ongoing in our tertiary care teaching hospital.

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Author Profile



S Sunil Kumar*, Pharm D Student, Santhiram college of Pharmacy, Nandyal. The author is a pharmaco in the college and interested in the research and publications. 2 international journals are published on various topics of the present medical problems to the patients. Attendee for national and international seminars and have submitted paper presentations in the seminars.



S Irfan, Pharm D Student, Santhiram college of Pharmacy, Nandyal. The author is a pharmaco in the college and interested in the research and publications.

M Keerthana, Pharm D Student, Santhiram college of Pharmacy, Nandyal. The author is a pharmaco in the college and interested in the research and publications.