ISSN: 0975 -8542

Journal of Global Pharma Technology

Available Online at: www.jgpt.co.in

RESEARCH ARTICLE

Determination the Nosiocomial Infections among Burned Patients Admitted at Al-Husseini Teaching Hospital in Holy Karbala

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Abstract

Background: Burn injuries behold one of the most devastating injuries among people for all age in the worldwide leading to causes premature mortality and with the disability. Materials and Method: An Analytical and Descriptive Study Conducted in order to identify bacterial and associated bacterial types to burn exposure types and with a microbial location among 100 patients who were burned and who arrived at AL-Husseini Hospital Teaching/ Burn Department) were taken by swabs, equipment, nurse, and environment of hospital. Data was collected and analyzed through a descriptive and inferential statistics approach. Results: Most of the bacteria that transmitted to the burned patients were (Staphylococcus aureus) which causes burn nosocomial infections was isolated commonly from hands of nurses and equipment of patients. Patients were exposed significantly to the types of bacterial infection when the value of p detection <0.01. Also, the types of bacterial infection is associated with artificial to a large extent the location of bacteria isolated as the value of p <0.01. Conclusion: The study concluded that Staphylococcus aureus skin more bacteria in the hospital environment and medical staff, which can be infected with the patient, especially a patient who is under fire. Bacterial infections are associated with types of burns. Bacterial infection is also dependent on microbial infection. Confirmed our findings need for careful cleansing of patients and their surroundings.

Keywords: *Determination, Nosiocomial Infections, Burned Patients.*

Introduction

Infection is the most common cause of death after injury burns. Burning patients are exposed to high risk of injury due to the nature of the burn itself [1, 2]. Joint hospital infections are common in patients with burns because of the characteristic characteristics of the disease: loss of the first line of defense against bacterial invasion. The presence of vascular tissue fragmented to provide a favorable environment for the growth of microbes. Changes in specific and non-specific components of the immune system; remove the digestive system. The expansion of the hospital and many invasive diagnostic and therapeutic procedures [3, 4].Patients in hospitals in the wings burns care more susceptible to diseases associated with the hospital due to the immune effect of the burns injures[5]. Associated infections that occur in hospitals to increase the duration of residence, prolonged treatment and increased costs [6].The incidence of burns the most important in many countries of the world health problem [7]. It includes associated organisms nosocomial infections in patients with burns organisms in self-plant (natural) of the patient, and from external sources in the environment, and health care workers. The distribution of organisms change over time in the individual patient can improve this difference through the proper management of burns and injured patient [8]. However, various studies have shown that Staphylococcus aureus is one of the greatest

causes of hospital infections in these patients [3] [9]. A previous study conducted in a hospital in Bern Tlgana of Khuzestan Province, Iran, to determine nosocomial infection in patients deprived [10]. On the basis of the national system of standards for monitoring nosocomial infection, in the case of all patients deprived of follow-up among bacterial species isolated distribution of burns [11].

Materials and Methods

The analytical and descriptive study was conducted in order to identify the types of bacteria nosocomial associated types of exposure to burns and the location of microbes between 100 patients have been burned and who have been admitted in the (Husseini Teaching Hospital / Department of burns and the environment), equipment, nurses and the environment in hospital.

Data Collected

Swabs were cultured in microbiology lab in nursing college.In different cultured media (Nutrient agar-Macconkeyagar-blood agar and manitol salt agar) and incubated in 37C for twenty-four hours. The microbial isolated were identification by biochemical test. The microbes were purification after identification by Dr. Nada Hindi.

Statistical Analysis

The used SPSS-ver.20 in order to analyze and evaluate the study data is used for statistical data analysis approach using. Methodology of statistical data used descriptive analysis to describe the study variables: frequencies and percentages. Statistical data analysis approach deductive: is used by applying the Chi-square test.

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Table 1: The Types of Nosocomial Bacteria infection

Types of Bacteria	No	%
Staphylococcus epidermidis	28	0.28
Staphylococcus auerus	18	0.18
Pesudomonus aurogenosa	14	0.14
Anterobacter	5	0.5
Klebsiella	4	0.4
Proteus	5	0.5
Staphylococcus saprophyticus	6	0.6
Acinetobacter	3	0.3
E.Coli	5	0.5
Enteroccoccus Feacalis	2	0.2
Bacillus	3	0.3
Serratia	2	0.2
Fungi	5	0.2

Most of the bacteria that transmitted to the human body through bed or the equipment, were *Staphylococcus epidermidis* and *Staphylococcus auerus*

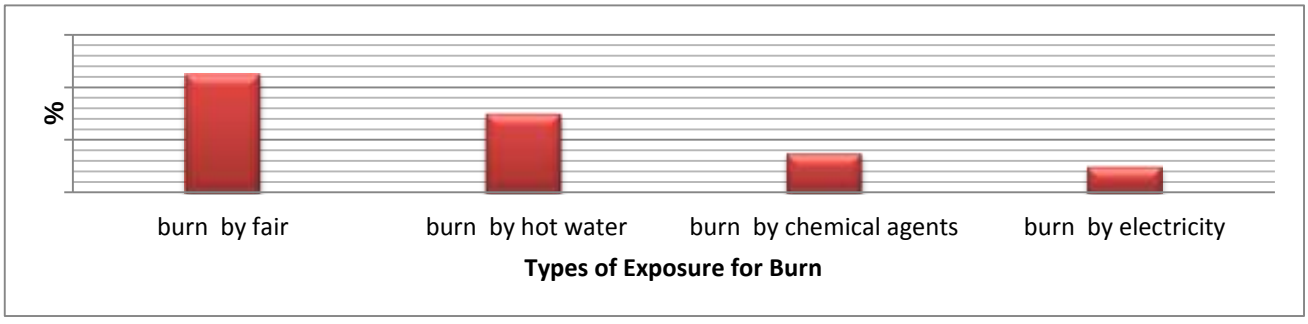

Figure 1: Type of Exposure for Burn
Findings reveal that the burn by fair a majority types of exposure to burn.

Table 2: Relationship between types of burn exposure and types of nosocomial infection

Types of nosocomial Bacterial	Rating	Type of Burn Exposure				Total	χ^2obs.	d.f	χ^2 crit.
		Faire	water	Chemical agent	Electricity				
	Staphylococcus epidermidis	28	0	0	0	28	286.42	36	50.998
	Staphylococcus auerus	17	1	0	0	18			
	Pesudomonus aurogenosa	0	14	0	0	14			
	Anterobacter	0	5	0	0	5			

	Klebsiella	0	4	0	0	4			
	Proteus	0	5	0	0	5			
	Staphylococcus saprophyticus	0	1	5	0	6			
	Acinetobacter	0	0	3	0	3			
	E.Coli	0	0	5	0	5			
	Enteroccoccus Feacalis	0	0	2	0	2			
	Bacillus	0	0	0	3	3			
	Serratia	0	0	0	2	2			
	Fungi	0	0	0	5	5			
	Total	45	30	15	10	100			
	P-value= 0.000→HS								

"χ^2obs. = Chi-square observer, χ^2crit. = Chi-square critical, DF= Degree of freedom, P-value= Probability value, HS= high significant" Findings presented that there is a high significant association between types of burn exposure and types on nosocomial infection bacterial at p detection <*0.01.*

Table 3: Types of nosocomial bacterial in relation to site of microbial isolates

Types of Nosocomil Bacterial	Rating	Site of Microbial Isolates											Total	D.f.	Sig.
		Neck	Chest	Pt. equipment	Head	Nurses Arm	Clothing patient	Back	Abdomen	Bed	Genital area	Legs			
	Staphylococcus epidermidis	9	13	4	2	0	0	0	0	0	0	0	28	120	χ^2.= 409.668 P-value=0.000 HS
	Staphylococcus auerus	0	0	0	2	0	3	3	10	0	0	0	18		
	Pesudomonus aurogenosa	0	0	0	0	0	0	0	3	8	3	0	14		
	Anterobacter	0	0	0	0	0	0	0	0	0	0	5	5		
	Klebsiella	0	0	1	0	3	0	0	0	0	0	0	4		
	Proteus	0	0	0	0	5	0	0	0	0	0	0	5		
	Staphylococcus saprophyticus	0	0	0	0	6	0	0	0	0	0	0	6		
	Acinetobacter	0	0	0	0	3	0	0	0	0	0	0	3		
	E.Coli	0	0	0	0	5	0	0	0	0	0	0	5		
	Enteroccoccus Feacalis	0	0	0	0	2	0	0	0	0	0	0	2		
	Bacillus	1	0	2	0	0	0	0	0	0	0	0	3		
	Serratia	0	0	2	0	0	0	0	0	0	0	0	2		
	Fungi	0	0	5	0	0	0	0	0	0	0	0	5		
	Total	10	13	14	4	24	3	3	13	8	3	5	100		

χ^2 = Chi-square, DF= Degree of freedom, P-value= Probability value, HS= high significant

This analysis depicts there is a highly association between site of microbial isolates and types of nosocomial bacterial infection p detection <*0.01*

Discussion

Part I: This result indicates Most of the bacteria that transmitted to the human body through bed or the equipment, were *"Staphylococcus epidermidis* and *Staphylococcus auerus*". One million serious infections caused in hospitals per year as being these bacteria are the two main pathogens in the genus due to the *S. epidermidis* is the dominant species that lives mostly on the skin, while *S. aureus* Most of them live on the mucous surfaces, as the largest proportion in the hospital. As a result we have come in the same line with a study conducted in Bulgaria in a multi-profile University of Pirogov Hospital, dealing with the causes of hospital infections in burns patients. Their findings reflect the fact that the most common was *S. epidermidis* and *S. auerus* in hospital [12].

Part II: Present results reveals that the burn by fair a majority types of exposure to burn. In a study conducted in Tehran, Iran deals with burn patients infected. A total 1721 hospitalized burnd patients were mortality rate among those patients was 5.9% as being burn wound infection by fair [13].

Part III: Findings presented that there is a high association between types of burn exposure and types on nosocomial infection bacterial at *p-value <0.01.* In a study has been investigated the nosocomial infection their risks factors in infected wounds. Findings deicts the types of burn exposure have been influence the suscibtibility to infection with nosocomial infection as *p-value <0.01* [14].

Part IV: Analysis depicts there is a highly associatioin between site of microbial isolates and types of nosocomial bacterial infection *p-value <0.01.* These results agree with surveillance deals with the epidemiology of nesocmial infection after estimated approximately 15% of all hospitalized patients suffer from these infections as statistic of WHO. Findings depict the nosocomial bacterial infection types depend on the injured site of the body [15]. Furthermore, infection with *Staphylococcus aureus, A. baumannii and Pseudomonas*

aeruginosa were the most common nosocomial pathogens in their burns center. When a body gets infected, natural chemicals are released into the bloodstream to help fight infections. However infection develops if the body develops inflammatory response to its own infection fighting chemicals [16].

Conclusions

The study concludes that the *Staphylococcus epidermidis* more bacteria are present in the hospital environment and medical staff, which can be infected with the patient especially the patient who is exposed to fire. A type's bacterial infection is more related to types of burn exposure. As well as, infection with nosocomial bacterial has been depends on the site of microbial infection. Our findings confirmed the need for careful cleansing of the patients and their surrounding.

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