JOURNAL OF COLLEGE OF EDUCATION FOR PURE SCIENCES
Vol. 8, No. 3, September 2018
Website: jceps.utq.edu.iq Email: jceps@eps.utq.edu.iq

Detection Of Pseudomonas Aeruginosaisolated From Burn Patients At The Teaching Hospital In The-Qarprovmce And Its Resistance To Antibiotics

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Abstract

The current study included the collection of (110) of Clinical samples *Pseudomonas-aeroginosa* from modelsbacteria from Sarsarymodels for burn patients in Thi-Qar Governorate for the period (1/12/2016 until 1/7/2017). The diagnosis of bacteria was based on plant traits, microscopic examination and growth on the differential and standard biochemical tests. The method of spreading the tablets andmeasuring the inhibition areas around the disk were used to test antibiotic resistance,(16) isolates were shown to be resistant antibiotics resistance to both antibiotics (Levoflaxacin 90%, Amikacin80%, Aztraonam 75%, Ampicillin 95% ,Carbenicillin80% , Cibrofloxacin 90%, Gantamicin 75% ,Cftazillin 70% ,Tetracycllin 55%, Imipenem 30%)

Key words :- Pseudomonas aeruginosa , Burn patients, Antibiotics

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الكشف عن بكتريا الزائفة الزنجارية Psedomonesaeruginosa المعزولة من مرضى الحروق في مستشفى التعليمي في محافظة ذي قار ومقاومتها للمضادات الحياتية

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الخلاصة

تضمنت الدراسة الحالية جمع (110) عينة لجرثومةالزائفة الزنجارية من نماذج سرسرية لمرضى الحروق في محافظة ذي قار للمدة (٢٠١٦/١٢/١لغاية ٢٠١٧/٧/١) . اعتمد تشخيص البكتريا على الصفات الزرعية والفحص المجهري والنمو على الاوساط التفريقية والاختبارات الكيموحيوية القياسية استخدمت طريقة الانتشار بالأقراص وقياس مناطق التثبيط حول القرص لاختبار المقاومة المضادات الحيويةاظهرت (١٦) عزلة مقاومة لكل من المضادات الحياتية(Levoflaxacin بنسبة 90%, Amikacin بنسبة 80% ,Aztraonamبنسبة 75%, Ampicillin بنسبةCarbenicillin% 95 بنسبة 80%, Cibrofloxacin بنسبة 90%, Gantamicin بنسبة Cftazillin 75% بنسبة Tetracyclin 70% بنسبة 55% , اما مضاد Imipenem بلغت المقاومة 30 %)

الكلمات الدالة:-الزائفة الزنجارية , مرضى الحروق, المضادات الحياتية

Introduction

*Pseudomonas aeruginosa*is a bacillus that is found in single cells or in an air chain (Brooks et al., 2004) and is characterized by its ability to live at (42) ° C and an ideal degree of (37) ° C (Toder, 2004). Pseudomonas aeruginosa Is a widespread bacteria found in soil and water and is found on the skin surface of humans and animals and on the surface of plants (Cornelis, 2008). *Pseudomonas aeruginosa* is an opportunistic bacterium with low immunity caused by bacteremia, septicemia, skin infection and injury to burns and burns, a cause of the burns that have caused the deaths of many patients with septicemia. The risk of these bacteria due to the widespread in hospitals and the surrounding areas, causing many diseases, which caused (10-120) of hospitalacquired diseases and post-traumatic diseases traction The burned areas are a sensitive location for the invasion of opportunistic germs due to the loss of natural protection provided by the skin tissue and the weakness of the immune system due to injury. Dead tissue is a suitable medium for growth and reproduction of germs, (Future, 2008). Bacterial resistance to antibiotics is due to several genetic factors. (Storz&Aronis 2000, Wickens& Wade, 2005). Increased resistance to bacterial strains has led to an increase in disease, mortality, and many infections that have been responsive to antibiotics (Blaser et al., 1995), which can no longer be easily overcome, Due to the abuse and excessive use of antibiotics (Nicolao and Budi 2002), the emergence of bacterial strains is not affected by antibiotics, especially hospital patients (Levy, 1999).

The aim

1-Isolation of *Pseudomonas aeruginosa*bacrteia from burns to compare disease charecteristice

2-Testing the extent of resistance to isolates studied antibiotic

Material and mothed

1-Collection of samples

A total of 110samples of burn patients were collected at Al-Hussein Technical Hospital in Thi-Qarprovemce(1/12/2016 - 1/7/2017). Swabs were taken with wound swab for the purpose of isolating and diagnosing*Psedomonesaeruginosa* Plantation and Biochemistry (Mucfadde, 2000)

2-**Inoculating**

Samples were inoculated on the (Blood Agar,Nutirate ager , MacConkey ager) to study the phenotypic characteristics of the colonies and to obtain single colonies for diagnosis.

3- Lab Diagnosis

Diagnosis based on phenotypic traits and biochemical tests based on diagnostic sources (Forbes, 2007) and diagnosis using API20 NE.

4- Susceptibility Antibiotic test

All isolates of antibiotics were tested according to the Bauer and Kirby method (1996). In this (12) antimicrobial agents, as shown in Table(1.1).*Psedomonesaeruginosa* for each strain (18) hours to the middle surface (MHA) and sprayed well Swab and left a quarter of an hour to dry the surface and distributed on the surface of the pollinated medium with antibiotics.

Table (1-1) Percentage of antibiotic resistance for isolates

antibiotic	Percentage of resistance%
Ampicillon	95
Levoflaxacin	90
Gantamicin	75
Amikacin	80
Ciproflaxacin	90
Ceftazilim	70
Aztereonam	75
Tetracyclin	55
Carbanem	80
Imipenem	30

Results and discussion

A total of (110) clinical samples were collected from burn patients in Al Hussein Educational Hospital in The-Qarprovemce(1/12/2016 - 1/7/2017). shows that the percentage the rate of infection in females is higher (84.45%) than that of males(17.45%) as shown in table (1-2), may be due to the fact that these bacteria are widespread in the soil and water in addition to being the bacteria spread in hospitals, which cause infections for patients Suffer from a lack of body defenses in addition to patients who have been in hospital for more than a week. On the other hand, these types of opportunistic germs, which need nutrients are simple to grow and it is characterized by resistance to disinfectants and

antibiotics and possess many factors of ferocity.

A total of (16) samples of *Pseudomonas aerouginosa* (19.59), (73) of different types of bacteria were obtained (66.36%), and there was no bacterial infection z (21) with (54% - 14%) without any type of bacteria

Isolation (16) was tested for bacteriaf*Pseudomonas aerouginosa*were selected for (10) antibiotic antibiotics using the Kirby and Bauer method. Bacteria resistance was determined by the measurement of diameters around the disc (Benson, 2002). The results were compared with the (CLSI, 2012) as shown in Table (1-1).

Bacteria are resistant to Ampicillin (95%) and are not produced by bactalactase enzymes. Thisenzyme leads to resistance to the plasmid or chromosome (Cole, 1986). These results were not consistent with (Zine El Abidine, 2015).Gantamycin (75%) was antagonistic to Aminoglycoside, which causes a decrease in membranepermeability. This result is not consistent with the results(Al-Rawi, 1999).

)70% .(This antibody belongs to the cephalosporin group. Resistance may be due to the frequent use of the treatment and the results are consistent with (Kazem 2010)

The anti-Ciproflaxacin (90%) is a quinolone that is lethal to microorganisms and inhibits the building of DNA or inhibiting the DNAgyrase enzyme as it leads to rapid death (Hardy, 2000). These bacteria have a wide spectrum against negativeandgram(Katzung, 2004).These findings were agreedwith(Jawad ,2011)

While the resistance percentage of the antibody returnAmikacin (80%)This antibody is due to the aminoglycoside group, which is a killer of microorganisms The bacterial protein is inhibited by binding to the unit (Katzung, 2004). These results were not consistent with (Uribe ,2010)

The isolates showed under study low resistance to counter the direction Imipenem reached (30%) antibiotic half an artificial from the group Carpinim produced by the bacterium Streptomyces cattleya, a broad spectrum against bacteria positive and negative gram which is fixed does not degrade the enzymes Alaptalaktames produced by most types Baktra that It is also effective against negative bacteria gram (Buckley et al., 1992) and agreed with these results (Abidin, 2005).

Table (1-2) percentage of pathogens for patients

Age group	Male	%	Female	%
15-20years	3	17.6	9	9.6
21-25years	5	29.4	20	21.5
26-30years	6	35.29	36	38.7
31-35years	3	17.6	28	30.1
Total	17	15.45	93	84.45

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