



عزل وتشخيص البكتيريا المتواجدة في مرضى التهاب المرارة وأختبار حساسيتها للمضادات الحيوية

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الخلاصة :

هدفت الدراسة إلى عزل وتشخيص الأنواع البكتيرية الموجودة في التهاب المرارة لدى النساء والرجال باستخدام بعض الطرق المظهرية والتشخيصية للأنواع البكتيرية. جمعت العينات من كلا الجنسين بواقع 42 عينة بإشراف كادر طبي متخصص ولمختلف الفئات العمرية في مستشفيات مدينة الديوانية من شهر يونيو إلى أكتوبر. وجد أن النساء أكثر عرضة للإصابة بالتهاب المرارة بنسبة 16 عينة (32%) من أصل 29 عينة مقارنة بالذكور بمقدار 5 عينات (10%) من أصل 13 عينة ، قررت الدراسة التعرف على الأنواع البكتيرية المصاحبة لالتهاب المرارة ، حيث تم تحديد نوع الجرام. تم التعرف على البكتيريا السالبة في مقدمتها الإشريكية القولونية في 10 عينات بنسبة (47.6%) وهي أعلى نسبة عزل ، تليها *P.aeruginosa* و *Klebsiella Spp* بنسبة 9 (42.8%) و 2 (9.5%) من العينات على التوالي. كما تم اختبار حساسيتها للمضادات الحيوية لجميع عزلات الأنواع البكتيرية الثلاثة قيد الدراسة ، وكانت أعلى نسبة حساسية للمضاد الحيوي سيبروفلوكساسين (100%) للإشريكية القولونية ، و (90%) *Klebsiella spp* و (80%) للمضادات الحيوية. *P. areuoginosa* ، يليه المضاد الحيوي أميكاسين (80%) والسيفترياكسون (70%).

كلمات مفتاحية : التهاب المرارة ، بكتيريا السالبة لصبغة كرام ، حساسية المضادات الحيوية

Isolate And Identification Of Bacteria In Patients With Cholecystitis And Test For Antibiotic Sensitivity

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Abstract

The study aimed to isolate and diagnose the bacterial species present in cholecystitis in women and men using some phenotypic and diagnostic methods for bacterial species. Samples were collected from both sexes by 42 samples under the supervision of a specialized medical staff and for different age groups in Al-Diwaniyah city hospitals from June to October. It was found that women are more susceptible to cholecystitis by 16 samples (32%) out of 29 samples compared to males by 5 samples (10%) out of 13 samples, The study decided to identify the bacterial species associated with cholecystitis, where Gram-negative bacteria were identified, in the forefront of which were E.coli in 10 samples with a percentage of (47.6%) , which is the highest isolation percentage, followed by *P.aeruginosa* and *Klebsiella Spp* at 9 (42.8%) and 2 (9.5%) of the samples, respectively. Also, all isolates of the three bacterial species under study tested for their sensitivity to antibiotics, and the highest rate of sensitivity to the



antibiotic ciprofloxacin was (100%) for E.coli, (90%) Klebsiella spp and (80%) for P. areuoginosa, followed by the antibiotic amikacin (80%) and ceftriaxone (70%)

Keywords: cholecystitis , gram negative bacteria , antibiotic sensitive

Introduction 1.

Cholecystitis is a common disease and is often associated with obstruction of the bile duct by stones formed. This inflammation may be acute or chronic and occurs in males and females, but more frequent in females. Bacterial species can be considered the cause and contribute to the actual onset of cholecystitis (1) , These microbes can reach the gallbladder through the bile duct and bloodstream, stones or lymphatic duct, and the infection can be due to blood clots, obesity, systemic diseases such as diabetes, or infection with some parasites (2) It is also believed that infection in the duodenum, which is the first part of the small intestine, is the main way through which bacteria are transmitted to the bile duct and may be accompanying after the removal of the gallbladder (3).

2.Materials and methods

a.Collection Sample

42 samples were collected from patients suffering from cholecystitis (bile, kidney stones, tissue biopsy) under the supervision of a specialized medical staff for the period from June to October 2022 and all were transferred by a sterile cotton pad to the laboratory with a period of time not exceeding 30 minute

b.Culture and diagnosis of specimens

The swabs were transferred directly to the laboratory within 20-30 minutes. The samples were cultured on media of blood and MacConkey agar, then incubated at 37°C for 24 hours, as well as incubation of media that did not show growth within 24 hours for another 24 hours before being negative, In addition to conducting chemo-biological tests, including the use of the indole test and the Voges-Proskauer (VP) test , consumption test Citrate and Api20.

c. Diagnosis by System Analytical Profile Index Api 20

This test was used to give an accurate diagnosis of bacteria gram negative, and this test was carried out according to the instructions of the French company that equipped Biomerieux, where drops of sterile water were placed on the groove on which the tape is placed to create moist conditions, and then the suspension was prepared, by transferring isolated and pure colonies growing on The 24-hour-old nutrient culture medium was added to the liquid medium of the api 20 kit, was inoculated with the bacterial suspension by a sterile pipette, then the strip was



closed in the designated container and incubated at 37 °C for 24 hours, then the results were compared with the guide of the API 20(4) .

3.Result and discussion

Samples were collected in this study for the purpose of knowing the infection with bacterial species and as a result of inflammation of the gallbladder in women and men, and the consequent removal of the gallbladder and the psychological and physical harm caused to it, which leads to the need for surgical and therapeutic interventions to treat the disease and not to exacerbate it.

Table No. 1 distribution of cholecystitis patients according to age and sex

Age	Male	Female	Cholecystitis	
11-20	1	1	0	1
21-30	5	9	2	3
31-40	3	7	1	4
41-50	2	5	1	2
51-60	2	7	1	6
Total	13	29	5	16
Percentage	26%	58%	10%	32%

as it was found that women are more susceptible For cholecystitis compared to men, Table 1)

, and this is consistent with the results of the study (5) (percentage of isolation of bacterial species associated with cholecystiti Table No.2

Type of bacteria	Cholecystitis		Total	Percentage %
	Male	Female		
<i>E.coli</i>	2	8	10	47.6
<i>P. areuoginosa</i>	2	7	9	42.8
<i>Klebsiella spp.</i>	1	1	2	9.5

Table No. (3) Susceptibility of *E.coli* isolated from cholecystitis to antibiotic

Type of antibiotic	Code	S	R
Amikacin	AK	8(80%)	2(20%)
Amoxicillin/Clavulonic Acid	AMC	10(100%)	0(0%)
Cefitroxone	CFT	7(70%)	3(30%)
Chloramphenicol	C	1 (10%)	9(90%)

Ciprofloxacin	Cip	100%) (10	(%)0
Tobramycin	TB	70(%)	30) (%) 3

S:sensitive R:Resistant

Table No. 4: Susceptibility of *P. aeruginosa* isolated from cholecystitis to antibiotic

Type of antibiotic	Code	S	R
Amikacin	AK	80(%)	20(%)
Amoxicillin/Clavulonic Acid	AMC	10(%)	90(%)
Cefitroxone	CFT	70(%)	30(%)
Chloramphenicol	C	0(%)	100(%)
Ciprofloxacin	Cip	80(%)	20(%)
Tobramycin	TB	60(%)	40(%)

Table No. 5: Susceptibility of *Klebsiella spp.* isolated from cholecystitis to antibiotic

Type of antibiotic	Code	S	R
Amikacin	AK	80(%)	20(%)
Amoxicillin/Clavulonic Acid	AMC	0(%)	100(%)
Cefitroxone	CFT	70(%)	30(%)
Chloramphenicol	C	0(%)	100(%)
Ciprofloxacin	Cip	90(%)	10(%)
Tobramycin	TB	50(%)	50(%)

It was found that the highest percentage of isolation in Gram-negative bacteria, *E.coli*, compared to *Klebsiella spp.* Table No. 2 This is consistent with what he mentioned.

It was found that all types of bacteria under study isolated from people suffering from cholecystitis are sensitive to ciprofloxacin and amikacin, (Table No. 3 A .B and C), and this is consistent with what he mentioned (7), (8) .

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