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3 March 2022, THURSDAY		Chair: Elnur SERDAROV	Session P8 • Time: 12.00-13.15
AZ	Elnur SARDAROV Zaur	DƏDƏ QORQUT DASTANINDAKI MILLI DƏYƏRLƏRİN GƏNCLƏRƏ TƏSİRİ: DƏDƏ QORQUD DASTANI TƏDQIQATI	
AZ	Elnur SARDAROV Zaur	MƏNƏVİ DƏYƏRLƏRDƏ MÜNASİBƏTLƏR VƏ FƏRQLİKLƏRİN İDARƏ EDİLMƏSİ	
AZ	Elnur SARDAROV Zaur	MƏNƏVİ DƏYƏRLƏRİN ÖZÜNƏ İNAMIN YARANMASINDAKI ROLU	
AZ	Elnur SARDAROV Zaur	MILLİ VƏ MƏNƏVİ DƏYƏRLƏRİN TƏSNİFLƏŞDİRİLMƏSİ: DƏDƏ QORQUD DASTANININDAN ÖRNƏKLƏR	
AZ	İsmayıl Əmirli	THE DIGITAL WORLD AND ZERO MARKETS MODEL	

4 MARCH 2022, FRIDAY • Olympos Conference Hall

4 March 2022, FRIDAY		Chair: دكتور / طارق النور هدى	Session O6 • Time: 10.30-11.45
IRQ	Dr.Thaer Mahmood Taha: Aseel Kamel Abdul Hussein:Iman Ali Muhammad, Tanygin Maxim Olegovich, Ali Ayid Ahmad	Effect of aqueous and alcoholic extracts of the leaves of Myrtus communis L on the destruction of eggs and larvae of the major wax moth Galleria mellonella (Lepidoptera: Pyralidae)	
IRQ	Hassan A.Hassan , Sarmad Almaawi	The correlation between the refractive error of patient and the degree of squint	
TR	Ayad M.Noor Hussein ·Dr. Ferhat ATASOY	Mobil Cihaz Sensörleri ile Sürücü Davranış Analizi	
IRQ	Rafal Fadhil Jabbar, Osama Qasim Jumah Al-Thahab	Text Steganography in Image depending on Radon _ Walsh code Transforms	
IRQ	أ.م.د. عبد الرحمن محمود .م.م. هدى خالد خضير	توظيف منصات التواصل الاجتماعي في تقديم خدمات المعلومات لطلبة الجامعات لاغراض التعليم عن بعد	
TR	Ahmad Ayid Ahmad, Hüseyin Polat , Tanygin Maxim Olegovich , Ali Ayid Ahmad , Dobritsa Vyacheslav Porfirevich	Breast Cancer Predication Using Data Mining Techniques	

4 March 2022, FRIDAY		Chair: أ.م.د. علي عطيه عذاب	Session O7 • Time: 12.00-13.15
IRQ	Khair Aldeen Mohammed Al dahel Al Sabaiwy	Unusual presentation of corona virus disease, survey study	
TR	Ahmad Ayid Ahmad ·Hüseyin Polat ·Cemal KOÇAK , Tanygin Maxim Olegovich, Ali Ayid Ahmad	A New Method for Energy Saving on Wireless Sensor Network Based on Clustering Method	
IRQ	أ.م.د. عادل محمد عبد الله الطائي	تأثير صوت المريض في جودة الرعاية الصحية: دراسة استطلاعية لآراء عينة من المرضى في المستشفيات الأهلية بالموصل	
IRQ	Reem K. Ibrahim , Oqbah Abdul Halim , Iman Abbas Khudhair	Physiological and immunological examination of hepatitis B virus (HBV) patients in Ramadi General Hospital	
FS	Nbaa Mutea Abid Al-Alh , Ali Abd Sharad , Sura Saadoun Khalaf	Ovarian cysts and their effect on some physiological variables and normal flora of microorganism in unmarried women	

4 March 2022, FRIDAY		Chair: Dr. JATEEN RAOOF MAHMOOD	Session O8 • Time: 13.30-14.45
IRQ	د. نضال عزيز مهدي د. خديجة جمعة مطر	أثر أنماط هياكل الملكية على مستوى وجودة تقارير الاستدامة وفق مبادرة(كيو4- وكيو ار أي) للمصارف التجارية العراقية	
IRQ	Sara Taha Ismail , Baraa Moulod Al-Dabbagh	Pharmaceutical Excipients as a Potential Cause for Hypersensitivity and Drug Allergy	
IRQ	Reyam F. Salah	Biosynthesis of AgNPs by using Brassica Oleracea Capitata and inhibitory effect on some pathogens bacteria	
IRQ	MD. Waleed Amer Dhayee Al-Ahmady MD. Riyedh Okab Meree	Administrative Bullying Of The Officials Of The Scout Units In Iraq From Their Point Of View	
IRQ	Khair Aldeen Mohammed Al dahel Al Sabaiwy	Estimation of the ratio between Copper & Zinc in Pregnant Women Suffering from Iron deficiency anemia	

4 March 2022, FRIDAY		Chair: د. علاء حسون عبدالرسول العبيدي	Session O9 • Time: 15.00-16.15
IRQ	أ.م.د. يوسف يعقوب شحادة	القيادة الإدارية ودورها في ترسيخ التنمية المستدامة في المؤسسات التربوية والتعليمية	
MAR	عبد العزيز لعبيدي	العلوم الدينية بين الواقع وسؤال المنهج	
LBY	د أنور محمد أحمد أبو جناح	حاصلات وامتيازات مقر البعثة الدبلوماسية (دراسة في ضوء اتفاقية فيينا 1961)	
LBY	أ.د. حسن محمد ماشا عريان	منهجية البحث في القصد السلمي	
IRQ	Assistant Lecture Anfal Hamodat	Effect of tectonic structure in design of hardscape elements of landscape	
FS	أمل عدنان نجم	الصلاة النفسية وعلاقتها بالتكيف لدى المرأة الفلسطينية	



Physiological and immunological examination of hepatitis B virus (HBV) patients in Ramadi General Hospital

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Abstract

Background The large spread of viral hepatitis and the infection of many age groups, young people and the elderly in conditions of lack of awareness of the seriousness of this disease, it would have been better to shed light on this disease. **Methodology** Samples were collected from patients suffering from hepatitis B virus after diagnosing the disease using the ELISA device, where the number of infected reached 20 patients. In contrast, samples were collected from 20 others who were not infected as a control, Many physiological tests were performed, including WBC count , CRP ,GOT ,GPT and alkaline phosphatase The concentrations of interleukin 10 and 2 were measured using an ELISA device and compared with the control. **Result** there was an increase in the number of white blood cells, which reached 9480 cells per ml in the infected when compared to the control group, which had 4700 cells per ml. The concentration of C-reactive protein in the infected was also higher, at 24 mg/ml, indicating that viral hepatitis has an effect on some physiological variables. compared to the control 6 mg / 100 ml, as well as for the other variables GOT and GPT, there was a rise in their concentrations when compared to the control , the effect of viral hepatitis on interleukin 2 and 10 concentrations, which increased to 10. 24 and 10. 5 in each case, respectively, when compared to control 2, 5, indicating that infection of liver cells with this virus stimulated immune cells to secrete these immunocytokines as part of an immune response.

Keywords: hepatitis B, Physiological ,immunological examination

Introduction



Hepatitis is a dangerous liver illness caused by the hepatitis B virus. It is spread by contact with infected blood (HBV)⁽¹⁾ Hepatitis B infection can develop chronic in certain persons, which implies that it lasts for longer than six months in some cases. When you have a chronic hepatitis B infection, you increase your chances of having liver failure. ⁽²⁾ Despite the severity of hepatitis B's signs and symptoms, the vast majority of people who catch the virus recover fully. Infants and children are more likely than the general population to get chronic (long-term) hepatitis B infection. ^(3,4) Hepatitis B infection can be avoided with vaccination, however there is no cure for the condition at the moment. ⁽⁵⁾ Additionally, if you are infected with hepatitis B, taking certain precautions will help prevent the disease from spreading to others. ^(6,7) Hepatitis B signs and symptoms can range in severity from mild to severe^(8,9) They typically manifest between one and four months after infection, but may manifest as early as the second week, depending on the person. Certain individuals, often young toddlers, may exhibit no signs or symptoms. ⁽¹⁰⁾ the act of sexual activity. If you have unprotected sexual contact with an infected individual, your chance of developing hepatitis B infection rises. The virus can be transmitted to you if a person's blood, saliva, sperm, or vaginal secretions come into contact with your body ⁽¹¹⁾ Exchange needles. Hepatitis B virus spreads rapidly when contaminated needles and syringes are used⁽¹²⁾ By exchanging intravenous drug paraphernalia with others, you may increase your risk of developing hepatitis B. ⁽¹³⁾ A mother's bond with her fetus. Pregnant women who are infected with the hepatitis B virus during their pregnancy can transmit the illness on to their unborn offspring. Vaccination, on the other hand, can practically always protect newborns from viral infection. ⁽¹⁴⁾ If you are pregnant or want to become pregnant, discuss the possibility of getting tested for hepatitis B with your doctor. ⁽¹⁵⁾

Methodology

Samples were collected from patients suffering from hepatitis B virus after diagnosing the disease using the ELISA device, where the number of infected reached 20 patients. In contrast, samples were collected from 20 others who were not infected as a control.

Physiological parameters

Many physiological tests were performed, including WBC count , CRP ,GOT ,GPT and alkaline phosphatase

Immunological tests

The concentrations of interleukin 10 and 2 were measured using an ELISA device and compared with the control

Result

Table 1 The effect of hepatitis B virus infection on some physiological variables

Dependent Variable: concentration			
clinical case	physiological parameter	Mean	Std. Deviation
patient	WBC count	9480.00	460.435
	CRP	24.00	4.183
	GOT	90.00	6.124
	GOT	93.60	5.683
	alkaline phosphatase	90.60	7.956
	Total	1955.64	3844.453
control	WBC count	4700.00	273.861
	CRP	6.60	.894
	GOT	12.80	.837
	GOT	13.40	4.336
	alkaline phosphatase	19.40	3.507
	Total	950.44	1916.709

Symptoms do not always manifest themselves in patients; for example, in young toddlers, symptoms are only seldom observed. Symptoms emerge in people within 3 months of contracting the illness. A high body temperature, exhaustion, and lethargy, as well as nausea and vomiting, are common symptoms of this illness. Other



symptoms include pains in the joints, yellowing of the skin, and yellowing of the eyes and skin pigmentation (yellowness). According to the findings in Table 1, there was an increase in the number of white blood cells, which reached 9480 cells per ml in the infected when compared to the control group, which had 4700 cells per ml. The concentration of C-reactive protein in the infected was also higher, at 24 mg/ml, indicating that viral hepatitis has an effect on some physiological variables. compared to the control 6 mg / 100 ml, as well as for the other variables GOT and GPT, there was a rise in their concentrations when compared to the control.

Table 2 ANOVA table of effect of hepatitis B virus infection on some physiological variables

Dependent Variable: concentration					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	454367781.100 ^a	9	50485309.010	1757.948	.000
Intercept	105566262.100	1	105566262.100	3675.921	.000
case	12630338.000	1	12630338.000	439.801	.000
parameter	397202370.900	4	99300592.730	3457.744	.000
case * parameter	44535072.200	4	11133768.050	387.689	.000
Error	1148732.800	40	28718.320		
Total	561082776.000	50			
Corrected Total	455516513.900	49			

Because there are no symptoms associated with chronic hepatitis B infection, many persons who have the virus are unaware that they are infected. Despite the fact that there are no symptoms, the virus can still be detected in the bloodstream. The first signs of hepatitis C may occur 30 years after the infection, and the liver progressively becomes destroyed over the course of those years. When symptoms develop, they are comparable to those of an acute sickness, but they suggest that the liver disease has



progressed to an advanced state. Over the course of their lives, 15 percent to 20 percent of patients with chronic hepatitis B will develop major liver disorders, such as liver damage, cirrhosis, liver failure, and liver cancer, among other things. Worldwide, about 600,000 people die each year as a result of illnesses connected to liver disease caused by the hepatitis B virus, according to the World Health Organization. There were significant differences between patients and non-infected patients, as well as significant differences between physiological variables compared with control, in the results of the analysis of variance for the effect of viral hepatitis on some physiological variables, as shown in Table 2. There was also a significant difference between the interaction between variables and the pathological condition, as shown in Table 2. is evident in the table of analysis of variance, and this may be interpreted as His assessment of the virus's action on liver cells, which resulted in a high quantity of liver enzymes in the bloodstream.

Table 3 The effect of hepatitis B virus infection on some immunological variables
Descriptive Statistics

Dependent Variable: concentration pg/ml			
clinical case	immunological test	Mean	Std. Deviation
patient	interleukin 2	10.13	6.289
	interleukin 10	24.10	1.524
	Total	15.72	8.527
control	interleukin 2	2.20	.837
	interleukin 10	5.50	1.080
	Total	4.40	1.882
Total	interleukin 2	8.15	6.459
	interleukin 10	14.80	9.628
	Total	11.48	8.765

Cytokines, one of the earliest forms of cytokines to be characterized, are a category of molecules (proteins, glycoproteins, and peptides) released by immune system cells that act as messengers between cells and have an influence on other types of cells, including other immune cells. Initially, it was believed that the first kind of interleukin was one of the variables responsible for stimulating high temperatures,

regulating lymphocyte activity, increasing the amount of immune cells generated by the bone marrow, and causing bone joint damage. This was then amended to incorporate other characteristics such as bone joint damage. Interleukin I exists in two separate forms, alpha and beta, and both are released prior to inflammation as a type of active immune response. It is generated by a variety of cells, including macrophages, monocytes, and fibroblasts. Additionally, these types increase the concentration of adhesion factors on endothelial cells, promoting the migration of white blood cells that attack pathogenic organisms to the site of injury, and stimulate the thermoregulation centers in the hypothalamus gland, resulting in an increase in body temperature, referred to as "fever." Increased body temperature helps the immune system fight infection and illness. This is demonstrated in Table 2 by the effect of viral hepatitis on interleukin 2 and 10 concentrations, which increased to 10.24 and 10.5 in each case, respectively, when compared to control 2, 5, indicating that infection of liver cells with this virus stimulated immune cells to secrete these immunocytokines as part of an immune response.

Table 4 ANOVA table of effect of hepatitis B virus infection on some immunological variables

Dependent Variable: concentration pg/ml					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2408.042 ^a	3	802.681	49.149	.000
Intercept	3768.010	1	3768.010	230.721	.000
case	1508.610	1	1508.610	92.374	.000
parameter	638.867	1	638.867	39.119	.000
case * parameter	243.810	1	243.810	14.929	.000
Error	587.933	36	16.331		
Total	8263.000	40			
Corrected Total	2995.975	39			

a. R Squared = .804 (Adjusted R Squared = .787)

Table 4 Analysis of variance for the effect of viral hepatitis infection on interleukin-2. 10 Where there were significant differences between treatments and control, and there were significant differences for the interaction between the variables and the pathological condition as shown in Figure 1

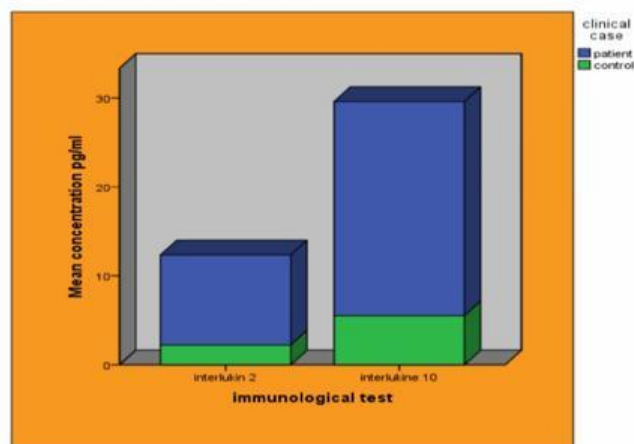


Figure 1 effect of hepatitis B virus infection on some immunological variables

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**8th International Conference on Multidisciplinary Sciences (8th icomus)**

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