Results

Clinical data and biochemical characteristics of 30 children divided into healthy children (control group 10 cases) and 20 patients with chronic liver diseases and bacterial infection.

Twenty patients were included in this study their ages ranged from 9 months to 13 years with a mean of 8.4 ±2.9y

Table (1) & figures (1, 2, 3 and 4): show that:-

The diseased group were 10 females (50%) and 10 males (50%). Most of patients commonly presented by Fever (70%), abdominal pain (65%), Jaundice (60%), bleeding tendency (40%), and Vomiting (40%).

Eleven (55%) patients were under weight (below 3rd percentile on growth chart), most of patients admitted to hospital due to medical causes (85%) vs. (15%) surgical causes.

Thirty-five percent (35%) of patients had past history of viral hepatitis.

Table (2):

Shows no significant difference between the diseased group and control group regarding age and sex of the studied cases, but there was a significant difference in weight and vital signs.

Although there was a significant difference between control and diseased group regarding temperature, BP, RR and pulse (P value < 0.001, 0.01, 0.05, 0.001 respectively) but we found lack of sensitivity of

vital signs to detect bacterial infection in chronic liver diseases(sensitivity was 70%, 65%, 70%, 70% respectively).

In our study, we found that six patients had normal temperature, six patients had normal pulse, six patients had normal RR and seven patients had normal BP.

Table (3):

Sixty percent of studied patients had jaundice, 50% had palmar erythema, 55% had pallor, 50% had abdominal hernias, 35% had superficial abdominal tenderness, 25% had dilated abdominal veins, 40% had rebound tenderness, and 75% had ascites.

The liver was shrunken in 30%, enlarged in 45%and not palpable 25%. The spleen was enlarged in 75% and not palpable 25% of patients.

Table (4):

Ultrasonographic examination of all patients revealed that 45% had shrunken liver, 50% had enlarged liver, and 5% had average liver size, 75% had splenomegaly and 75% had ascites.

Table (5)& figures (5,6,7and 8): Haemogram studies

Complete blood count of the all studied cases (control & patient). There is significant difference in hemoglobin, platelets, total white blood cells and segmented leucocytes (P value < 0.01).

Tables (6 and 7)& figures (9 and 10): In our study, we found that 12/20 patients had elevated WBCs count and 14/20 had elevated segmented leucocytes, so WBCs count and segmented leucocytes were not sensitive to detect bacterial infection in chronic liver diseases. Sensitivity of WBCs and segmented leukocyte were 60%, 70% respectively.

Table (8) & figure (11):

There is highly significant difference in patients group compared to the control group regarding liver function tests (ALT, AST, total proteins, serum albumin, total and direct serum bilirubin, prothrombin time) and kidney function test (serum creatinine).

Tables (9 and 10) & figures (12 and 13): Serum PCT among patients' ng/ml and Serum CRP among patients mg/L.

Table (11) & figures (14 and 15):

There is a statistical significant difference between groups as regard serum PCT, serum CRP, ESR, total W.B.Cs and relative segmented leucocytic count (P value 0.001, 0.001, 0.001, 0.01, 0.001) respectively. Sensitivity of PCT, CRP, ESR, total W.B.Cs and segmented leukocyte was (90%, 80% 75%, 60% and 70%) respectively.

The Receiver Operator Characteristic Curve (ROC): is a graphic representation of the relationship between Sensitivity and Specificity at different cut-off points for serum PCT and serum CRP.

The area under a curve represents the overall accuracy of tests: the larger the area, the better the test. The curve closet to the upper left corner has the greater Sensitivity and Specificity and hence the more accurate of the two curves. So serum PCT is better than serum CRP in diagnosis bacterial infection in chronic liver diseases.

Table (12) & figures (16, 17, 18 and 19):

Correlation coefficient between PCT and different variables among patients: We found no correlation coefficient between PCT and (Age, Wt, Temp, RBCs, WBCs, relative segmented neutrophiles, ALT, AST, total serum Bilirubin, Direct serum bilirubin, serum Protein, serum

Albumin, prothrombin time and serum creatinine) among patients. But we found significant positive correlation coefficient between PCT and ESR .we also found insignificant correlation coefficient between PCT and CRP.

Table (13) & figures (20 and 21):

Shows the classification of the studied patients according to Child-Pugh classification of cirrhosis. 7 cases (35%) were included in Child Pugh class B and 13 cases (65%) were included in Child Pugh class C. PCT and ESR were higher in Child Pugh class B while CRP was higher in Child Pugh class C but there was no significant difference between Child Pugh class B and Child Pugh class C regarding PCT, CRP and ESR

Table (14):

10 patients had Spontaneous bacterial peritonitis (SBP). There were 6 males (60%) and 4 females (40%). Their age ranged from 11mo to 13 yrs with a mean of 8.63 ± 3.71y.

Most of patients commonly presented by Fever (70%), abdominal pain (70%), jaundice (70), bleeding tendency (40%), diarrhea (30%) and Vomiting (50%).

Table (15):

Clinical examination of 10 patients had Spontaneous bacterial peritonitis (SBP). It revealed that palmar erythema (60%), superficial tenderness (50%), Rebound tenderness (50%), dilated abdominal veins (30%), splenomegaly (80%) and Tense ascites (50%).

Table (16):

Ultrasnographic findings of 10 patients had Spontaneous bacterial peritonitis.

It revealed that patients with spontaneous ascetic fluid infection had shrunken liver 50% and had enlarged liver 50%.

Splenomegaly was found in 80% of patients. The amount of ascites detected ranged from moderate 50%, to massive 50%.

Table (17):

There was a statistical significant difference between groups as regard ALT, AST, Total serum proteins, serum albumin, Serum bilirubin (total and direct), prothrombin time and serum creatinine.

Table (18): Haemogram studies

Complete blood count of the Spontaneous bacterial peritonitis (SBP) and control.

There is significant difference in hemoglobin, platelets and relative segmented leucocytes (P value < 0.01). White blood cell numbers are higher in patients than control group but the difference is not significant.

In our study, we found that 5/10 patients had elevated WBCs count and 6/10 had elevated relative segmented leucocytes in blood samples, so WBCs count and segmented leucocytes were not sensitive to detect Spontaneous bacterial peritonitis (SBP) in chronic liver diseases. Sensitivity of WBCs and segmented leukocyte were 50%, 60% respectively.

Table (19) & figure (22):

Show Physical examination of ascitic fluid in 10 cases of spontaneous ascetic fluid infection. ascitic fluid was clear in 50% (5/10), Turbid in 30% (3/10) and red in 20% (2/10).

Table (20): Show Total and segmented leucocytic count of ascitic fluid in 10 cases of Spontaneous bacterial peritonitis (SBP). There was increase in total leucocytic count (1621.3 ± 1375.6) and polymoprhonuclear count (1341.1 ± 1173.7) (before treatment).

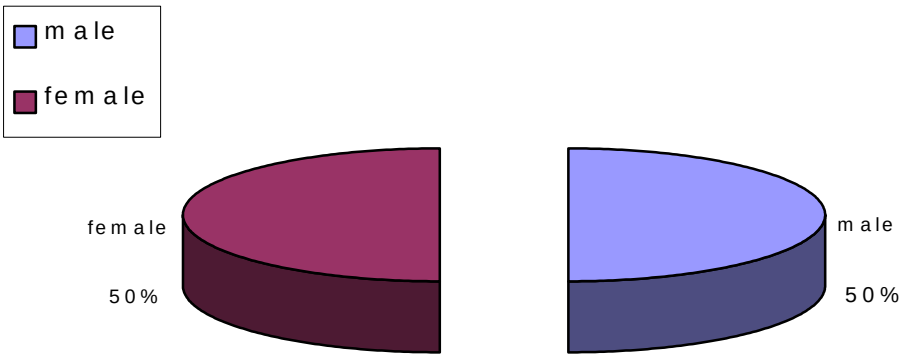
Table (21) & figures (23 and 24): Show serum PCT, serum CRP, ESR in 1st hour, WBC and relative segmented leukocytic count in blood of 10 cases of Spontaneous bacterial peritonitis and control.

There was a statistical significant difference between groups as regard serum PCT, serum CRP, ESR and relative segmented leucocytic count in blood (P value < 0.01, 0.001, 0.001, 0.01). Sensitivity of PCT, CRP, ESR and segmented leukocyte were 90%, 80%, 70% and 60% respectively.

There was statistical insignificant difference between groups as regard Total WBCs in blood (P value >0.05). Sensitivity of total W.B.Cs in blood was 50%.

Table (1): An overview on the relevant history and clinical data of the diseased group.

Variables	**Number of patients (%)**	
Sex: Female	10	50%
Males	10	50%
Weight: average weight	9	45%
Under weight	11	55%
Causes of admission:		
Medical causes:	17	85%
Surgical causes:	3	15%
Presentation:		
fever	14	70%
Abdominal pain	13	65%
Jaundice	12	60%
Bleeding tendency	8	40%
Vomiting	8	40%
Diarrhea	4	20%
Encephalopathy	1	5%
Haematemesis	1	5%
Melena	1	5%
Past history of viral hepatitis	7	35%



Figure(1):sex distribution of all patients

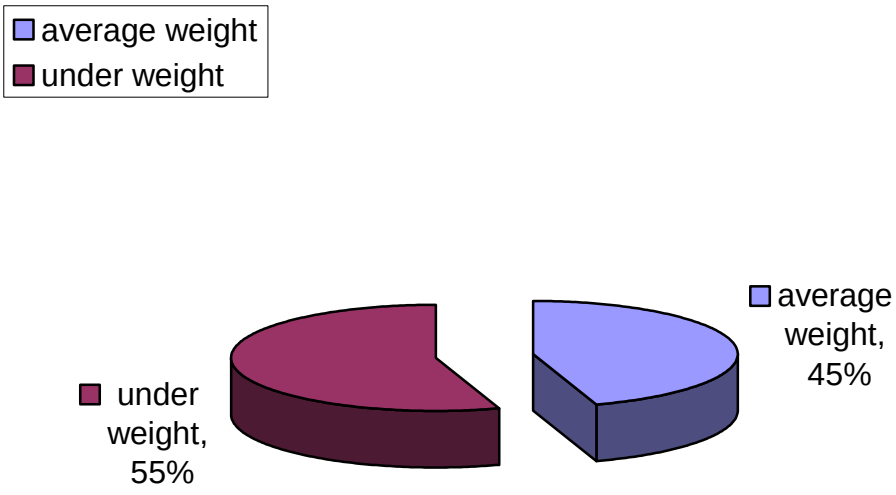


Figure (2): weight distriubution of all patients.

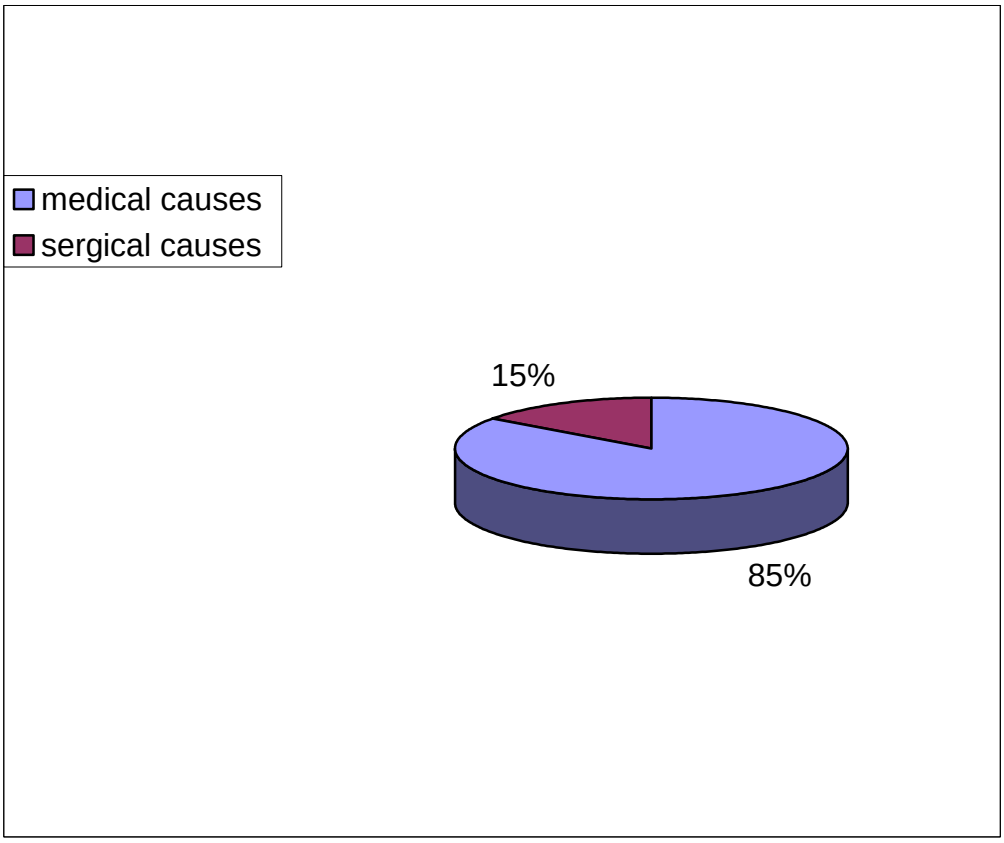


Figure (3): Causes of admission

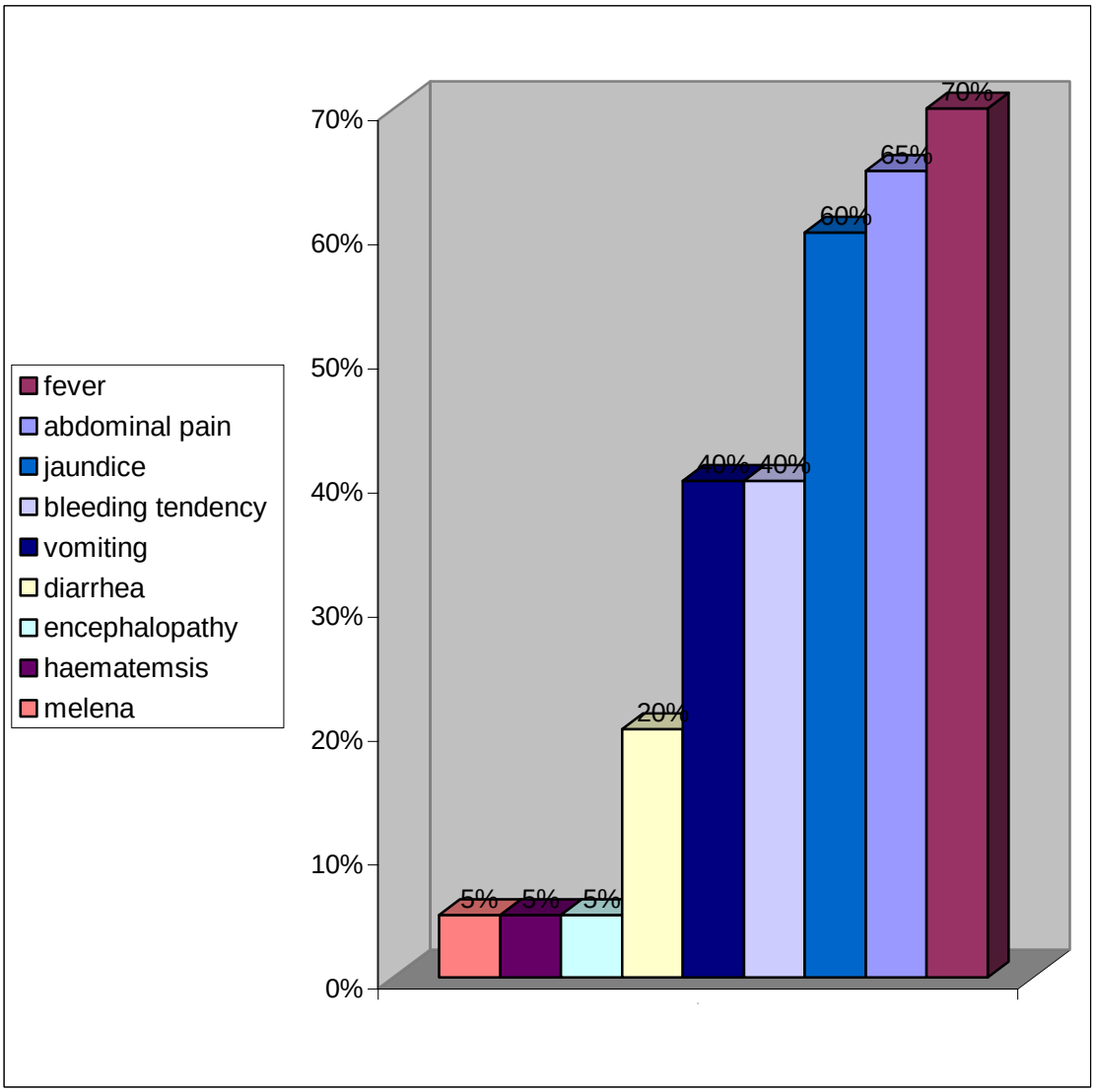


Figure (4): Clinical presentation of all patients.

Table (2): Age, sex, weight and vital signs of the control group and diseased group.

Variables	**Control (10)**	**Patients (20)**	**t test**	**P- value**
Age:				
Range	9m – 13yr	9m – 13yr		
($\bar{x}$ ± SD) yr	8.1 ± 4.2	8.4 ± 2.9	o.2	>0.05
Sex: Female	5(50%)	10(50%)		>0.05
Males	5(50%)	10(50%)		>0.05
Weight: ($\bar{x}$ ± SD) Kg	22.62 ± 6.21	17.45 ± 5.3	2.3	<0.05
Average weight	10(100%)	9(45%)		<0.05
Under weight	0(0%)	11(55%)		
Vital signs:				
Temperature	36.52 ± .51	38.47 ± .57	9.49	<0.001
Systolic blood pressure	100.3 ± 8.73	88.78 ± 11.38	3.1	<0.01
Diastolic blood pressur	65.52 ± 8.78	56.83 ± 6.38	2.78	<0.01
Respiratory rate	20.7 ± 5.48	24.99 ± 5.19	2.06	<0.05
Pulse	75.32 ± 8.69	95.98 ± 7 .50	6.42	<0.001

Table (2) shows no significant difference in age and sex in control &patients groups but there is a significant difference in weight &vital signs.

Table (3): Clinical examination of diseased group.

Variables	Number of patients (20) (%)	
General examination:		
Palmar erythema	10	50%
Jaundice	12	60%
Pallor	11	55%
Flapping tremors	1	5%
Foetor Hepaticus	1	5%
Spider naevi	0	0%
Abdominal examination:		
Abdominal Hernias	10	50%
Superficial tenderness	7	35%
Dilated abdominal vein	5	25%
Rebound tenderness	8	40%
Liver: Shrunken	6	30%
Enlarged	9	45%
Not palpable	5	25%
Spleen: Not palpable	5	25%
Enlarged	15	75%
Surgically removed	0	0%
Ascites: No asctis	5	25%
Mild	1	5%
Moderate	8	40%
Tense	6	30%

Table (4): Ultrasonographic findings of diseased group.

Variables	**Number of patients (%)**	
I-liver		
Size		
Average	1	5%
Enlarged	10	50%
Shrunken	9	45%
Focal lesions	0	0%
Portal vein		
Normal diameter	9	45%
Dilated	11	55%
Thrombosed	0	0%
II- Spleen		
Size: Average	5	25%
Enlarged	15	75%
Splenectomy	0	0%
III- Gall bladder		
Wall thickness		
Average	15	75%
Thick	5	25%
Surgically excised	0	0%
Mud	1	5%
Stones	0	0%
IV- Kidneys		
Size: Normal	20	100%
Shrunken	0	0%
Back pressure changes	0	0%
V- Ascites		
No ascitis	5	25%
Amount: Mild	1	5%
Moderate	8	40%
Massive	6	30%

Table (5): Complete blood count of the diseased and control groups.

Variable	Control (10) $\bar{x} \pm SD$	Patients (20) $\bar{x} \pm SD$	t	P-value
Hemoglobin (6mo-6yr: 10.5-14 g/dl) (7-12yr: 11-16g/dl)	12.5 ± 2.81	9.51 ± 1.7	3.09	<0.01
W.B.Cs: Total (6mo-6yr: 6000-15.000C/ml^3) (7-12yr: 4500:13.500 C/ml^3)	8127.4 ± 2143.1	11850.3 ± 4593.4	3.03	<0.01
Differential: Segmented (Normal 35-70%)	50.23 ± 10.41	75. 81 ± 32.99	3.17	<0.01
Lymphocytes (Normal 15-45%)	30.48 ± 9.23	20.21± 16.93	2.15	<0.05
Eosinophils (Normal < 4%)	2.2 ± 1.5	2.31 ± 1.87	0.17	>0.05
Monocytes (Normal 4-10%)	6.1 ± 1.2	5.95 ± 0.55	0.38	>0.05
Basophils (Normal < 2%)	0.9 ± 0.8	0.89 ± 0.87	0.03	>0.05
Platelets(C/ml^3) Normal 150000-450000	260132 ± 99176	129276 ± 78917	3.63	<0.01

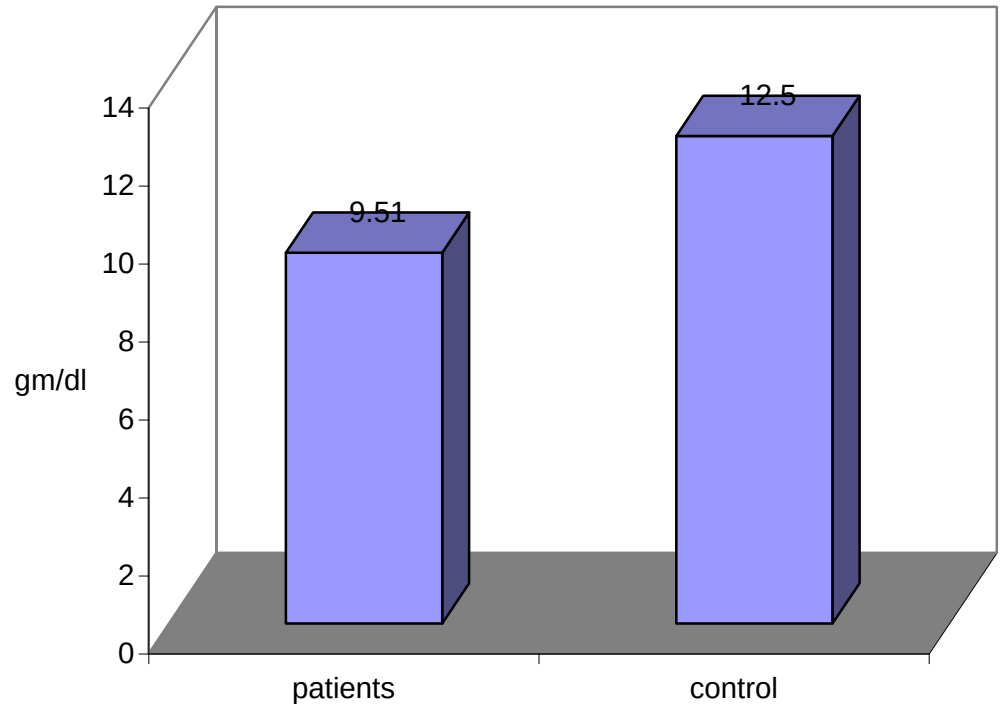


figure (5): means of Hemoglobin among the study groups

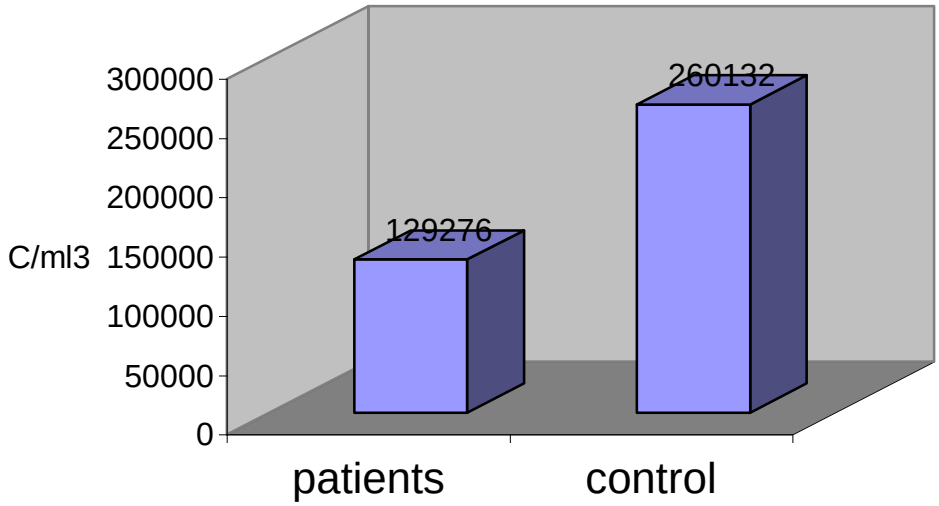


Figure (6): means of platelets among the study groups

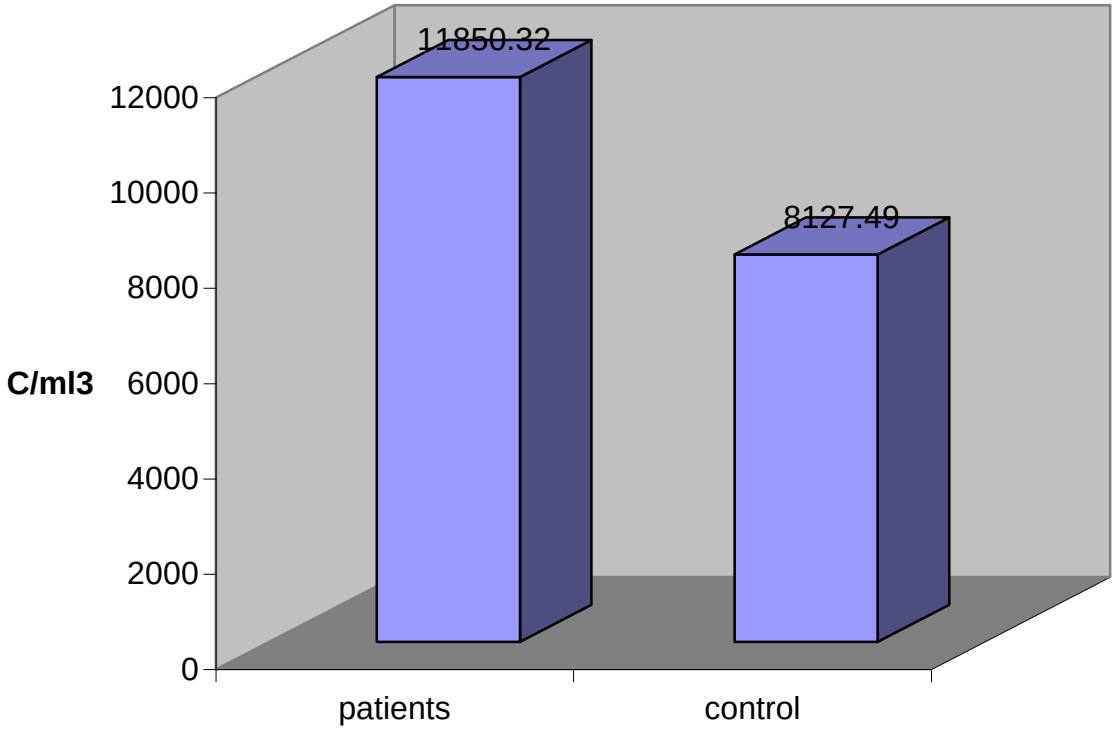


Figure (7): means of WBCs among the study groups

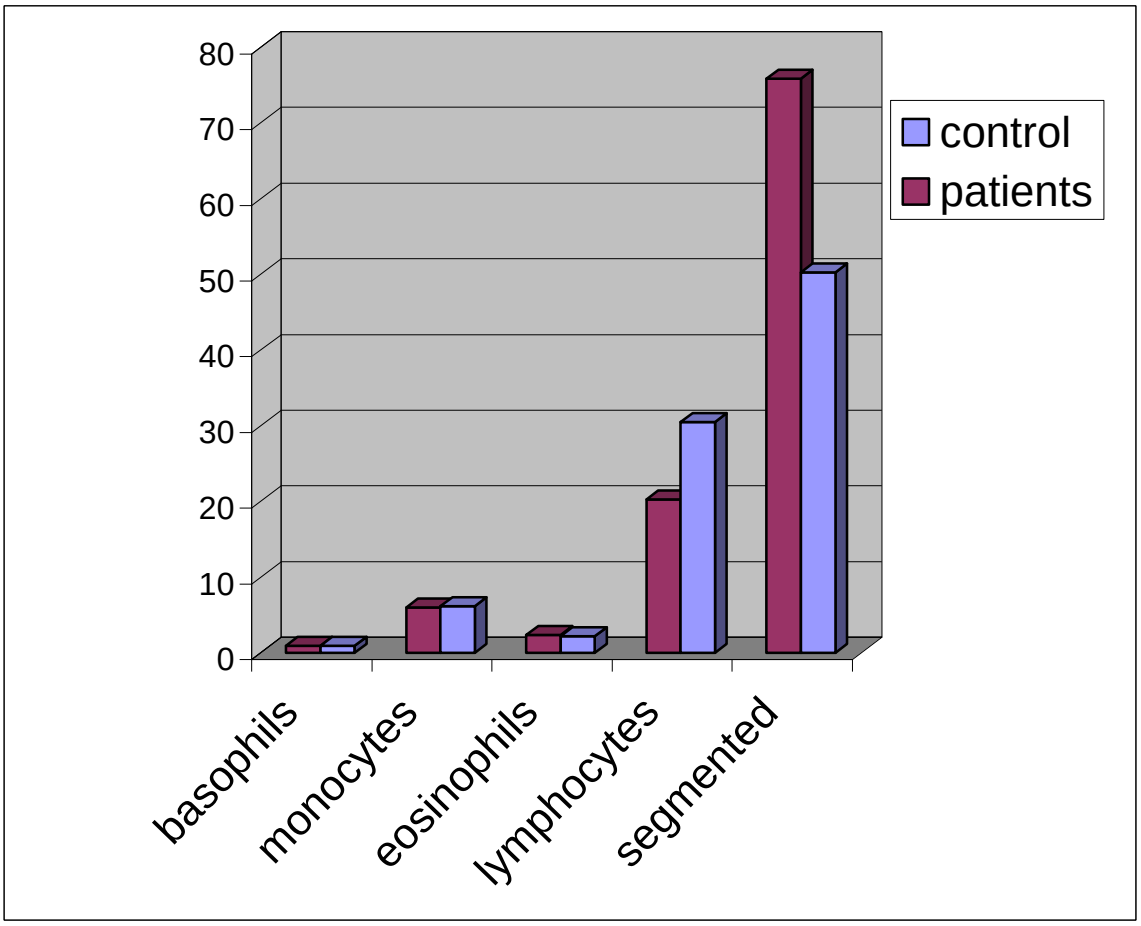


Figure (8): means of differential WBCs percentage among the study groups.

Table (6):

Total WBCs among patients	**Numbers of patients**	**%**
leucocytosis	12	60%
Normal leucocytic count	4	20%
Leucopenia	4	20%

Sensitivity of total W.B.Cs was 60% and specificity was 100%.

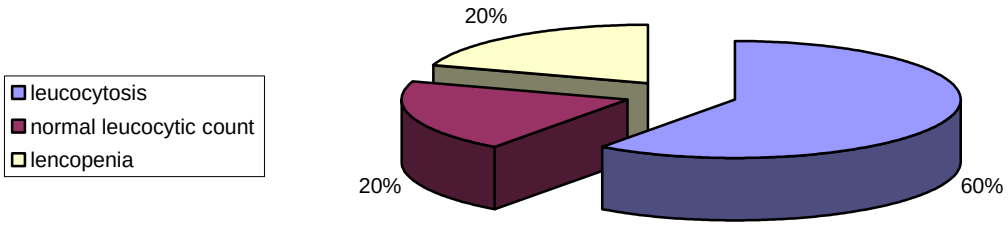


Figure (9): Total WBCs among patients

Table (7): Relative segmented leucocytes among patients

Segmented leucocytes among patients	Numbers of patients	%
Elevate segmented leucocytes	14	70%
Normal segmented leucocytes count	4	20%
Decrease Segmented leucocytes count	2	10%

Sensitivity of segmented leukocyte was 70% and specificity was 100%.

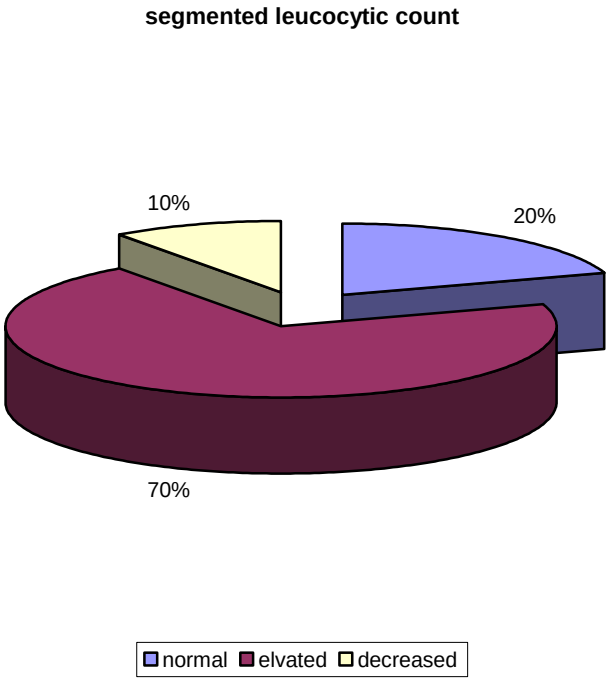


Figure (10): Segmented leucocytes among patients

Table (8): Liver function tests, prothrombin time and kidney function of all cases.

Variable	***Control*** $\bar{x} \pm SD$	**Patients** $\bar{x} \pm SD$	**t-test**	**P-value**
Alanine amino transferase (ALT)(Normal 5 -40 u/L)	15.97 ± 5.28	58.36 ± 63.38	2.97	<0.01
Aspartate amino transferase (AST) (Normal 5 – 37 u/L)	14.49 ± 6.37	67.17 ± 63.38	3.68	<0.001
Total proteins (Normal: 6.4 – 8.3 g/dl)	6.92 ± 0.83	5.81 ± 1.42	2.69	<0.01
Serum Albumin (Normal: 3.5 – 5.5 g/dl)	3.89 ± .64	3.13 ± 0.87	2.71	<0.01
Total Serum Bilirubin: (Normal: 0.2 - 1 mg/dl)	0.43 ±0 .23	3.16 ± 1.45	8.22	<0.001
Direct (Normal: 0-0.2 mg/dl)	0.11 ± 0.1	1.13 ± 0.89	5.06	<0.001
Prothrombin time (Normal 10 – 13 sec.)	11.1 ± .81	16.66 ± 5.84	4.18	<0.001
Serum creatinine (Normal: 0.6 – 1.2 mg/dl)	0.62 ± 0.21	1.25 ± 0.47	5.07	<0.001

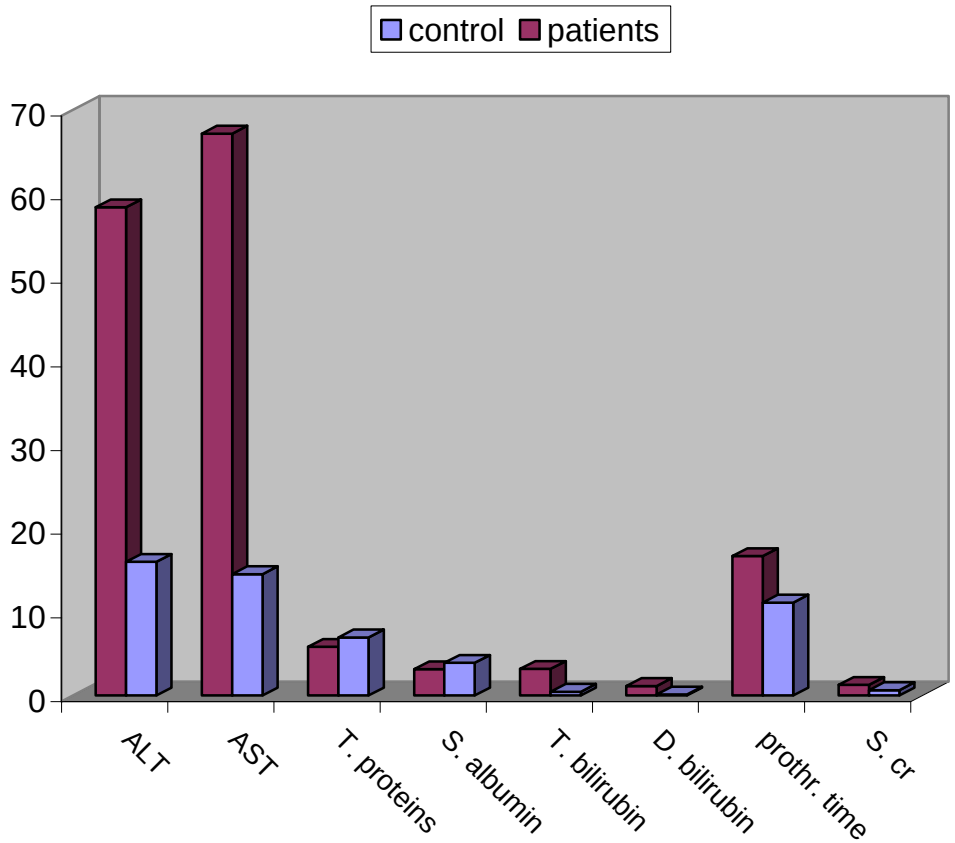


Figure (11): means of liver functions, prot. time and renal functions among the study groups

Table (9): Serum PCT among patients ng/ml

Serum PCT among patients ng/ml	Numbers of patients (20)	%
PCT less than0.5	2	10%
PCT > 0.5 and less than 2	9	45%
PCT more than 2 and less than 10	5	25%
PCT more than 10	4	%20

Figure (12): Serum PCT among patients ng/ml

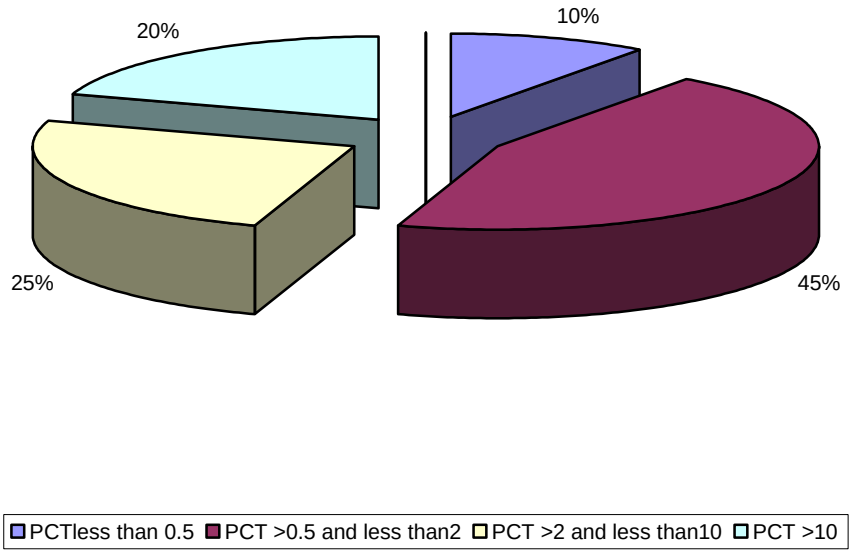


Table (10): Serum CRP among patients mg/L

Serum CRP among patients mg/L	Numbers of patients (20)	%
CRP less than 6	4	20%
6mg/L	3	15%
12mg/L	3	15%
24mg/L	3	15%
mg/L48	7	35%

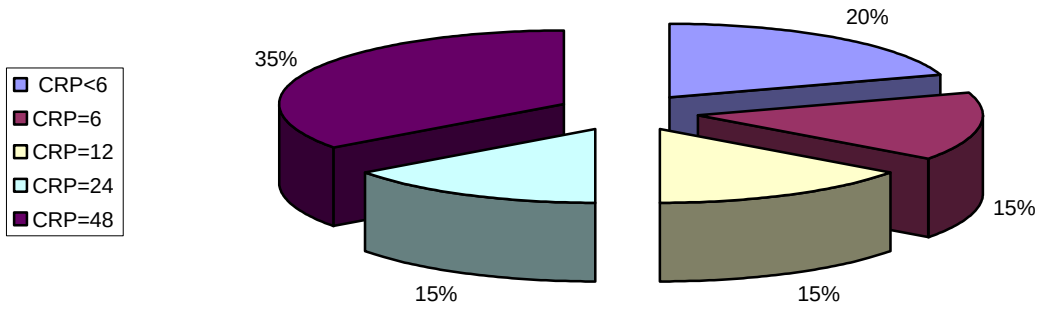
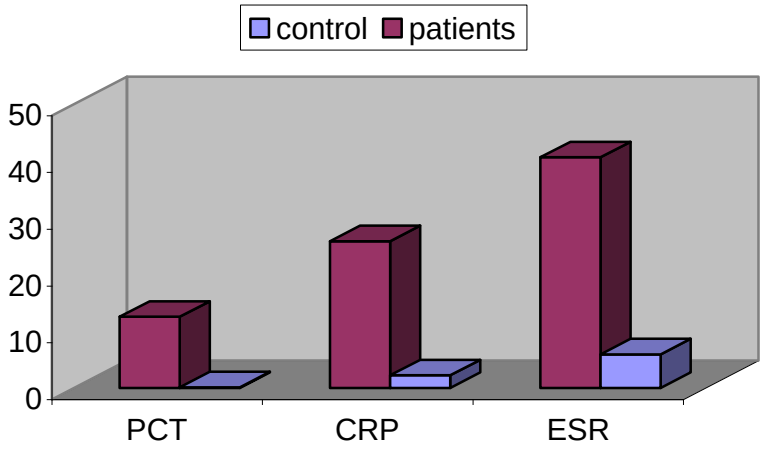


Figure (13): Serum CRP among patients mg/L

Table (11): PCT, CRP, ESR in 1st hour, total WBCs and relative segmented leucocytes of the studied cases.

Variable	*Control* $\bar{x} \pm SD$	*Patients* $\bar{x} \pm SD$	t	P-value
PCT (Normal less than 0.5 ng/ml)	**.1 ±0 .20**	**12.5 ± 11.6**	**4.78**	**<0.001**
CRP (Normal less than 6 mg/l)	**2.2 ± 2.17**	**25.82 ± 19.7**	**5.3**	**<0.001**
ESR (Normal 5-10 mm/h)	**5.91 ± 3.51**	**40.6 ± 21.87**	**6.92**	**<0.001**
Total W.B.Cs (6mo-6yr: 6000-15.000 C/ml^3) (7-12yr: 4500:13.500 C/ml^3)	**8127.4 ± 2143.1**	**11850.32 ± 4593.43**	**3.03**	**<0.01**
Segmented (Normal 35-70%)	**50.23 ± 10.41**	**75. 81 ± 22.99**	**4.19**	**<0.001**



Figure(14): means of PCT, CRP & ESR among the study groups

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figure(15): Receiver operating characteristic (ROC) curve of PCT and CRP

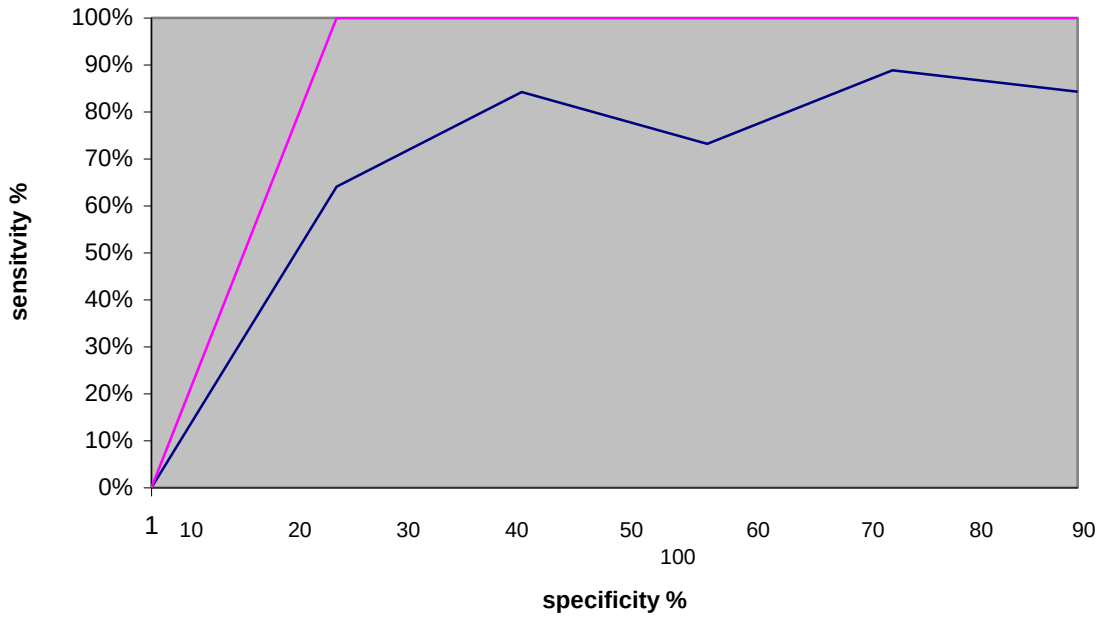


Table (12): correlation coefficient between serum PCT and different variables among patients.

PCT	"r"	P
Age	**-0.287**	**>0.05**
Wt	**0.078**	**>0.05**
Temp	**0.032**	**>0.05**
RBCs	**-0.272**	**>0.05**
WBCs	**-0.016**	**>0.05**
SGPT	**-0.104**	**>0.05**
SGOT	**-0.277**	**>0.05**
Bilirubin	**-0.272**	**>0.05**
D. bilirubin	**-0.218**	**>0.05**
Protein	**0.123**	**>0.05**
Albumin	**0.157**	**>0.05**
ESR	**0.4785**	**<0.05**
CRP	**0.182**	**>0.05**
Total W.B.Cs	**0.113-**	**>0.05**
Segmented leukocyte	**-0.259**	**>0.05**

figure (16): correlation between PCT and ESR

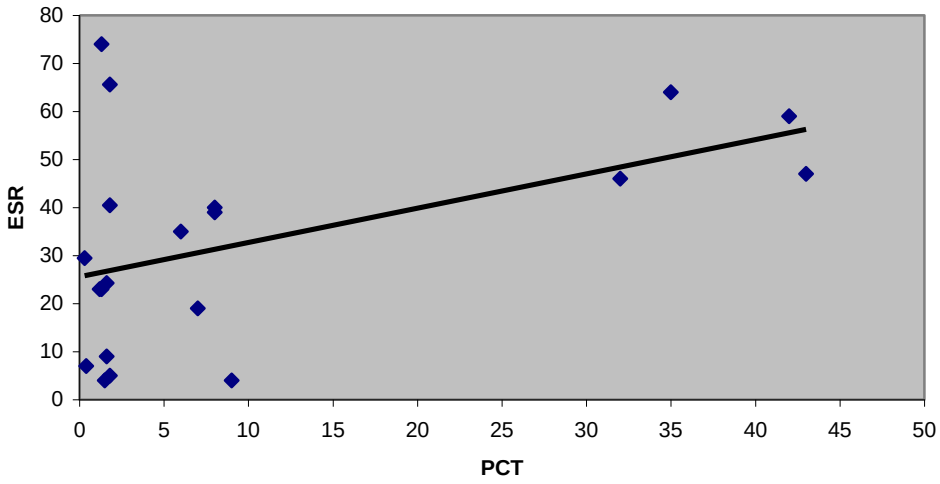


figure (17): correlation between PCT and WBCs

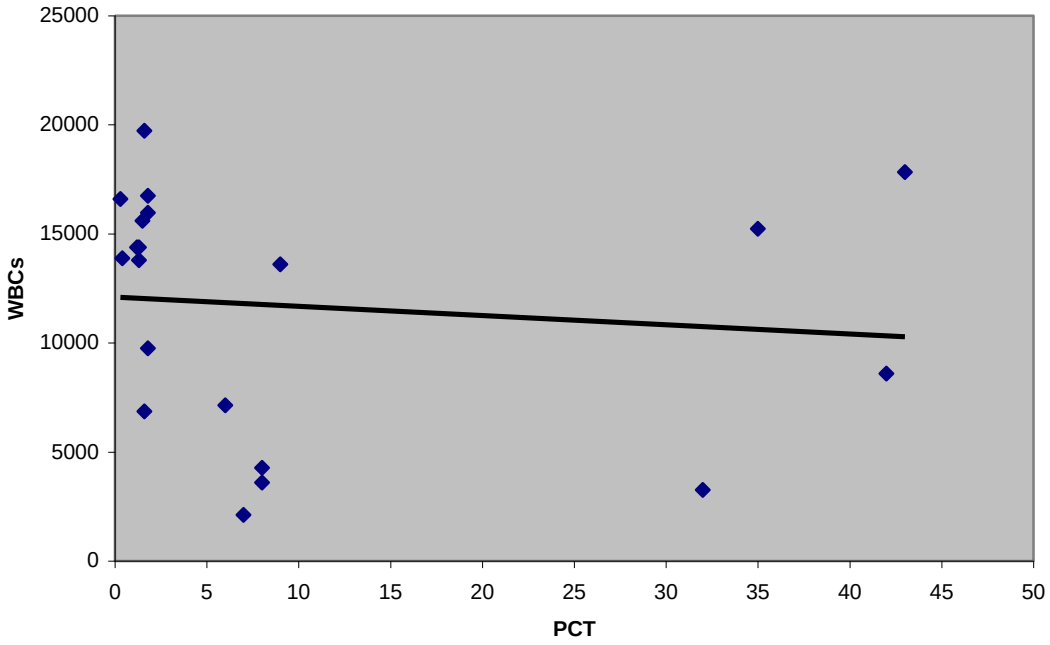
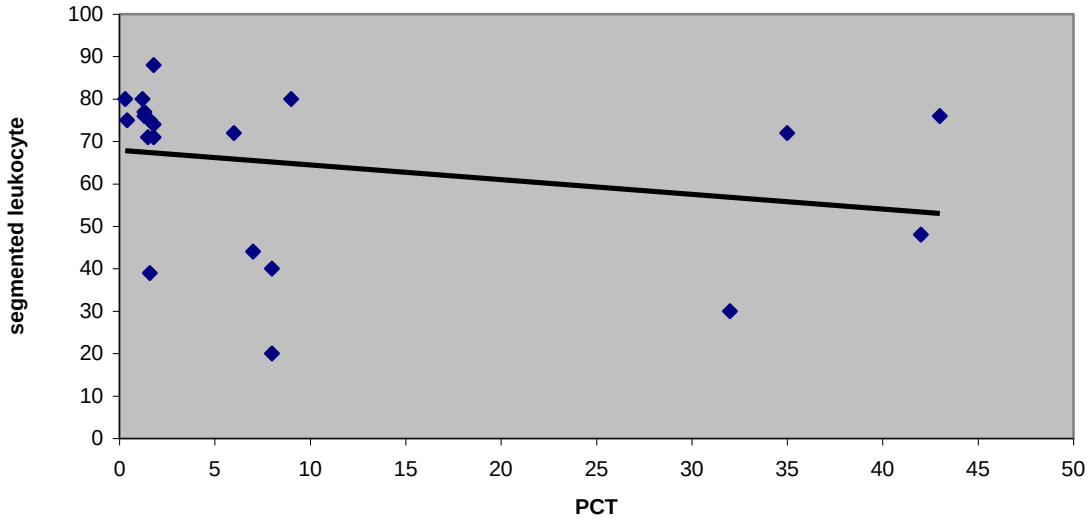


figure (18) :correlation between PCT and segmented leukocyte



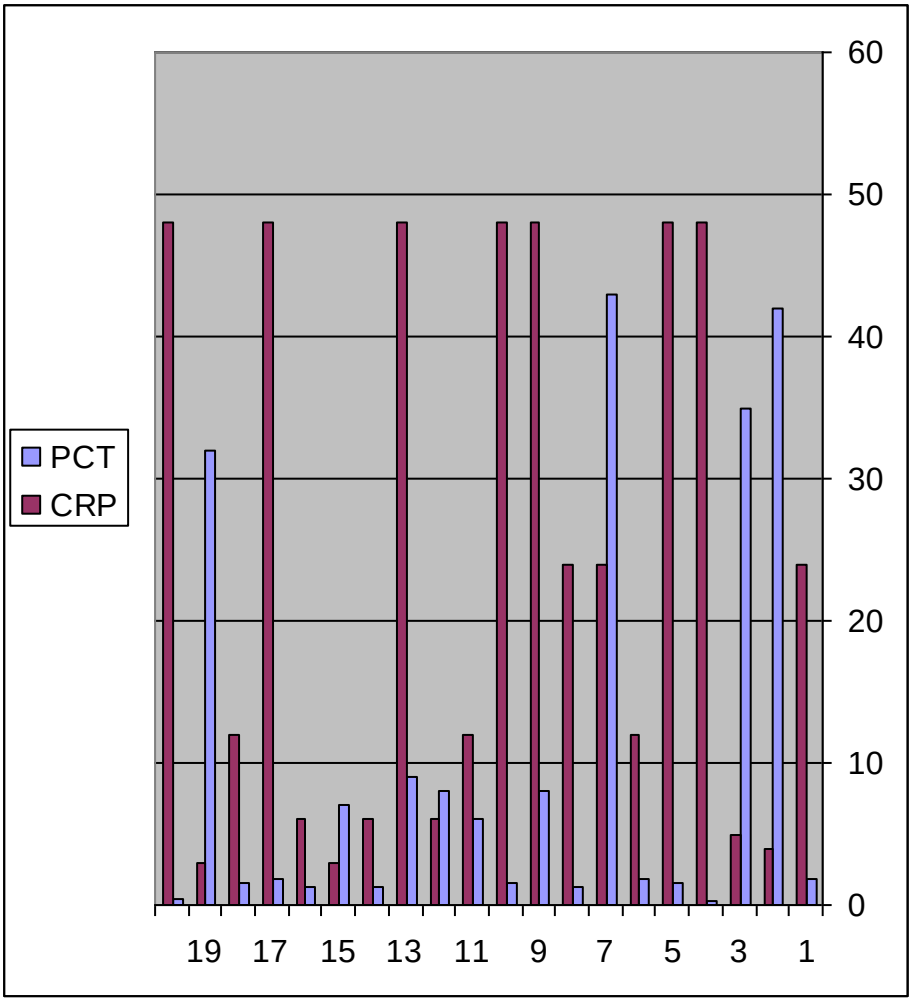


Figure (19): serum PCT and CRP among patients

Table (13): we classified chronic liver diseases according to severity of liver diseases by Child – Pugh classification of cirrhosis. 7 cases (35%) were included in Child Pugh class B and 13 cases (65%) were included in Child Pugh class C.

Grading	**Child Pugh class B**	**Child Pugh class C**	**Test 0f significance**	**P-value**
Number of patients(%)	7 (35%)	13 (65%)	Z=1.34	>0.05
PCT ($\bar{x}$ ± SD)	14.5 ± 12.2	10.2 ± 9.7	t =0.97	>0.05
CRP ($\bar{x}$ ± SD)	22.4 ± 17.1	27 ± 23.2	t =0.61	>0.05
ESR ($\bar{x}$ ± SD)	42.7 ± 23.43	39.2 ± 20.22	t =0.4	>0.05

PCT and ESR were higher in Child Pugh class B while CRP was higher in Child Pugh class C.

There was no significant difference between Child class B of cirrhosis and Child class C of cirrhosis regarding PCT, CRP and ESR.

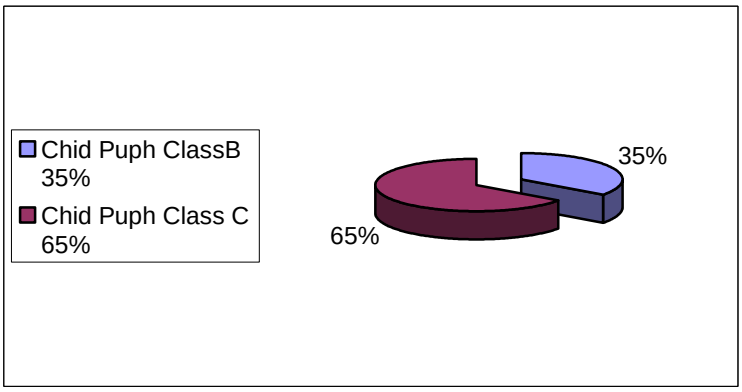


Figure (20): Classification of the studied patients according to severity of liver diseases.

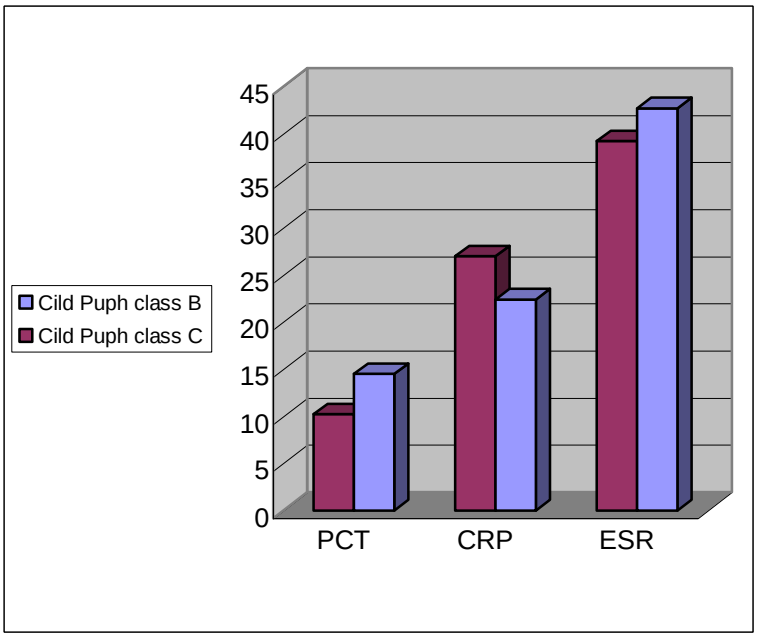


Figure (21): Means of PCT, CRP and ESR according to Child Pugh classification.

Table (14): Age, Sex, weight and Clinical presentations of Spontaneous bacterial peritonitis (SBP).

Variables	Spontaneous bacterial peritonitis (10)
Age:	
Range	11mo –13yr
($\bar{x}$ ± SD) yr	8.63 ± 3.71
Sex:	
Male	6 (60%)
Female	4 (40%)
Weight: (Kg)	
Average weight	5 (50%)
Under weight	5 (50%)
($\bar{x}$ ± SD)	17.28 ± 4.4
Clinical presentation:	
Bleeding tendency	4(40%)
Fever	7 (70%)
Abdominal pain	7 (70%)
Jaundice	7(70%)
Vomiting	5(50%)
Diarrhea	3(30%)
Encephalopathy	1(10%)
Haematemesis	1 (10%)
Melena	1 (10%)

Table (15): Clinical examination of Spontaneous bacterial peritonitis.

Variables	Spontaneous bacterial peritonitis (SBP). (No. = 10)
General examination:	
Palmar erythema	6(60%)
Flapping tremors	1(10%)
Spider naevi	0
Vital signs:($\bar{x} \pm$ SD)	
Temperature	38.28 ± 0.4
Systolic blood pressure	89.48 ± 10.4
Diastolic blood pressure	57.49 ± 9.3
Respiratory rate	25.3 ± 4.9
Pulse	94.52 ± 7.7
Abdominal examination	
Superficial tenderness	5(50%)
Abdominal hernias	6(60%)
Dilated abdominal veins	3(30%)
Rebound tenderness	5(50%)
Liver:	
Shrunken	3(30%)
Enlarged	5(50%)
Not palpable	2(20%)
Spleen:	
Not palpable	2(20%)
Enlarged	8(80%)
Ascites:	
Mild	0(0%)
Moderate	5(50%)
Tense	5(50%)

Table (16): Ultrasonographic findings in 10 patients of spontaneous bacterial peritonitis (SBP).

Variables	Spontaneous bacterial peritonitis (SBP) (No. = 10)
A- Liver	
Size: Average	0 (0%)
Enlarged	5 (50%)
Shrunken	5 (50%)
Portal vein:	
Normal diameter	4 (40%)
Dilated	6(60%)
B- Spleen	
Size: Average	2 (20%)
Enlarged	8 (80%)
C-Gall bladder wall	
Average	7 (70%)
Thick (> 3 ml)	3 (30%)
D- Ascites	
Amount: Small	0 (0%)
Moderate	5 (50%)
Massive	5(50%)

Table (17): Liver function tests, prothrombin time and serum creatinine in Spontaneous bacterial peritonitis (SBP) compare to control.

Variables	**Control (Mean ± SD)**	**Spontaneous bacterial peritonitis. (Mean ± SD)**	**t test**	**P - value**
Alanine amino transferase (ALT)(Normal 5-40 u/l)	15.97 ± 5.28	59.14 ± 29.58	4.54	<0.001
Aspartate amino transferase (AST) (Normal 5 - 37 u/L)	14.49 ± 6.37	69.79 ± 35.94	4.79	<0.001
Total proteins (Normal 6.4 – 8.3 g/dl)	6.92 ± .83	4.42 ± 2.33	3.2	<0.01
Serum albumin (Normal 3.5 – 5.5 g/dl)	3.89 ± .64	2.28 ± 0.49	6.32	<0.001
Total bilirubin (Normal 0.2 – 1 mg/dl)	0.43 ± 0.23	4.21 ± 1.2	9.78	<0.001
Direct bilirubin (Normal 0 – 0.2 mg/dl)	0.11 ±0 .1	1.21± 0.3	11	<0.001
Prothrombin time (Normal 10 – 13 sec)	11.1 ±0 .81	17.46 ± 5.63	4.24	<0.001
Serum creatinine (Normal 0.6 – 1.2 mg/dl)	0.62 +0 .21	1.28 ± 0.41	4.53	<0.001

Table (18): CBC of 10 cases of Spontaneous bacterial peritonitis (SBP) compare to control.

Variables	**Control (Mean ± SD)**	**Spontaneous Ascitic fluid infection (Mean ± SD)**	**P - value**
Hemoglobin (6mo-6yr: 10.5-14 g/dl) (7-12yr: 11-16g/dl)	12.5 ± 2.81	9.2 ± 1.44	<0.01
Total white blood cells (6mo-6yr: 6000-15.000 C/ml3) (7-12yr: 4500-13.500 C/ml3)	8127.4 ± 2143.1	10193.4 ± 4978.3	>0.05
Differential: Segmented (Normal 35% – 70%) Lymphocytes (Normal 15 – 45%) Oesinophils (Normal < 4%) Basophils (Normal<2%) Monocytes (Normal 4-10%)	 50.23 ± 10.41 30.48 + 9.23 2.2 ± 1.5 9 ± 0 .8 6.1 ± 1.2	 74.6 ± 23.13 22.01 ± 14.93 2.1 ± 3.18 0.88 ± 2.2 5.35 ± .78	 <0.01 >0.05 >0.05 >0.05 >0.05
Platelet count (Normal150.000-450.000mm3)	260132 ± 99176	119461± 37204	<0.01

Sensitivity of total W.B.Cs and segmented leukocyte were 50% and 60% respectively, but specificity were 100%.

Table (19): Physical examination of ascitic fluid in 10 cases of Spontaneous bacterial peritonitis (SBP).

	Spontaneous bacterial peritonitis (SBP).
Clear ascitic fluid	5 (50%)
Turbid ascitic fluid	3 (30%)
Red ascitic fluid	2 (20%)

Figure (22) Physical examination of ascitic fluid in 10 cases of Spontaneous bacterial peritonitis (SBP).

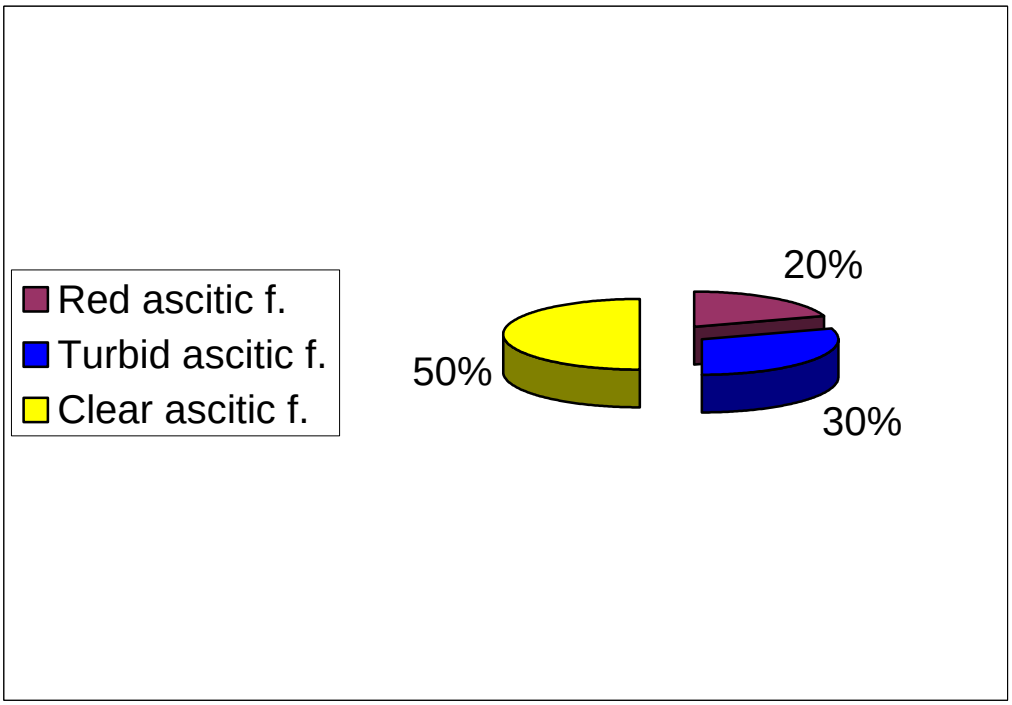


Table (20): Total leucocytic count and Polymorphonuclear leucocytic count of ascitic fluid in 10 cases of Spontaneous bacterial peritonitis (SBP). (Before treatment).

Variables	Spontaneous bacterial peritonitis (SBP) **(Mean ± SD)**
total leucocytic count (c/mm^3)	1621.3 ± 1375.6
polymoprhonuclear count (c/mm^3)	1341.1 ± 1173.7

Table (21): serum PCT, serum CRP, ESR in 1st hour, total WBC counts and relative segmented leukocytic counts in blood of 10 cases of Spontaneous bacterial peritonitis and control.

Variable	Control (Mean ± SD)	Spontaneous bacterial peritonitis. (Mean ± SD)	t test	P - value
PCT (Normal less than 0.5 ng/ml)	.1 ±.2	9.81 ± 10.6	2.9	<0.01
CRP (Normal less than 6 mg/l)	2.2 ± 2.17	26.6 ±10.3	7.03	<0.001
ESR (Normal 5-10 mm/1st h)	5.91 ± 3.51	43.87 ± 21.11	5.61	<0.001
Total white blood cells (6mo-6yr: 6000-15.000C/ml^3) (7-12yr: 4500-13.500 C/ml^3)	8127.49 ± 2143.19	10193.4 ± 4978.3	1.2	>0.05
Segmented leukocyte (Normal 35% – 70%)	50.23 ± 10.41	74.6 ± 23.13	3.04	<0.01

Sensitivity of serum PCT, CRP, ESR, total WBCs and relative segmented leukocyte were 90%, 80%, 70 %, 50% and 60% respectively but specificity were 100% .

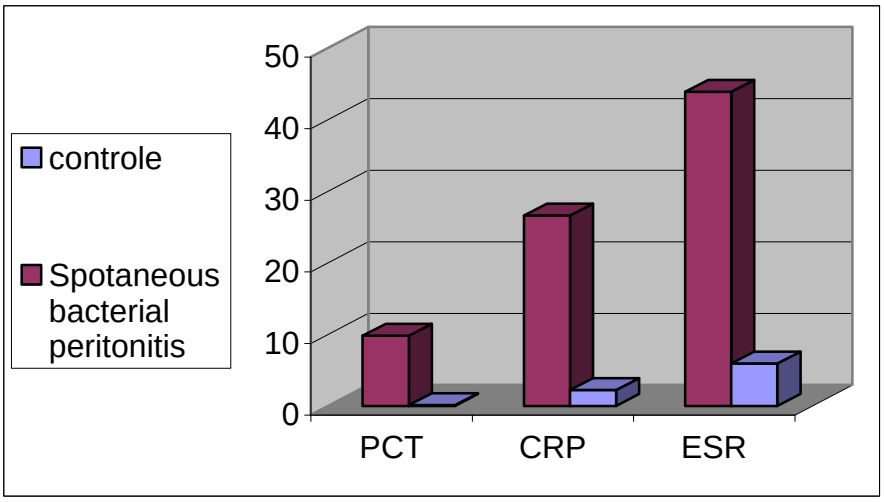


Figure (23): Means of serum PCT, serum CRP and ESR in Spontaneous bacterial peritonitis (SBP) and control.

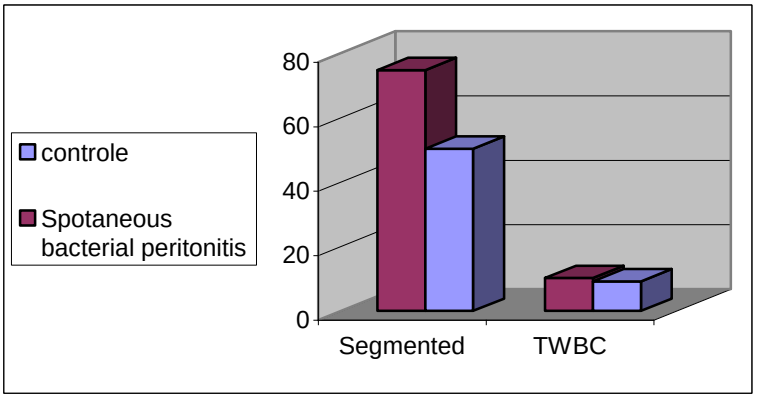
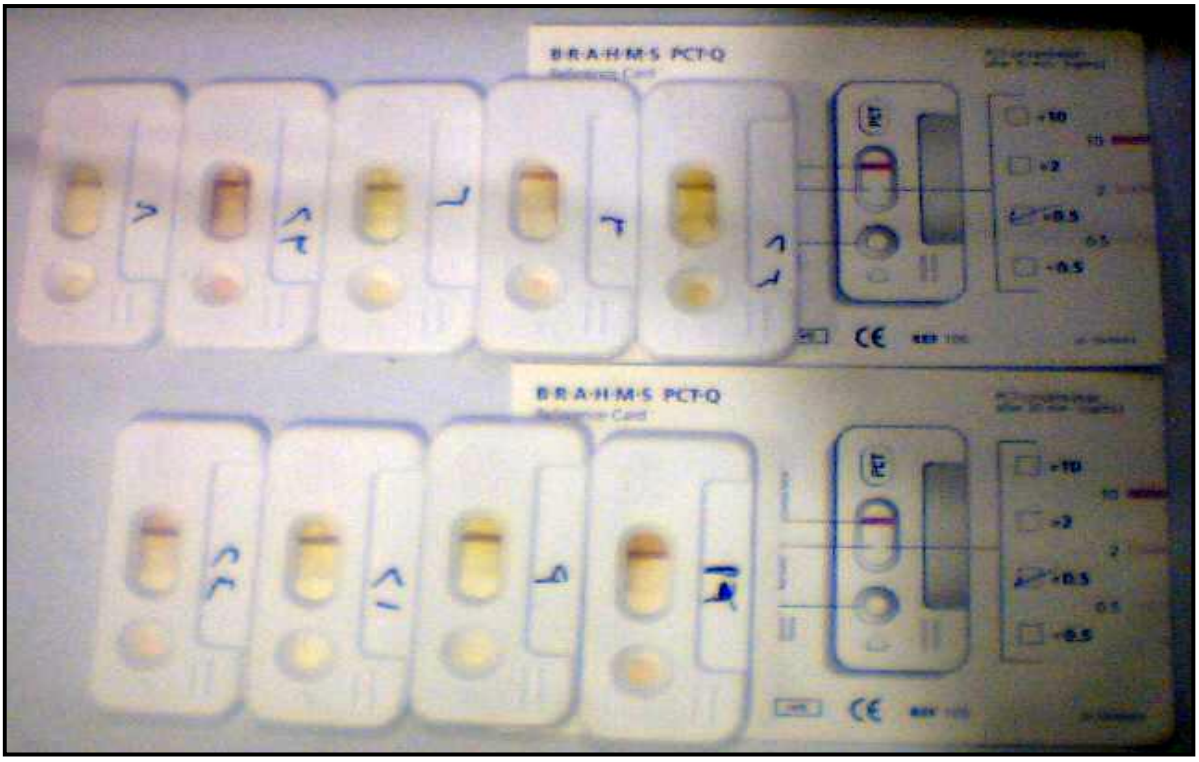


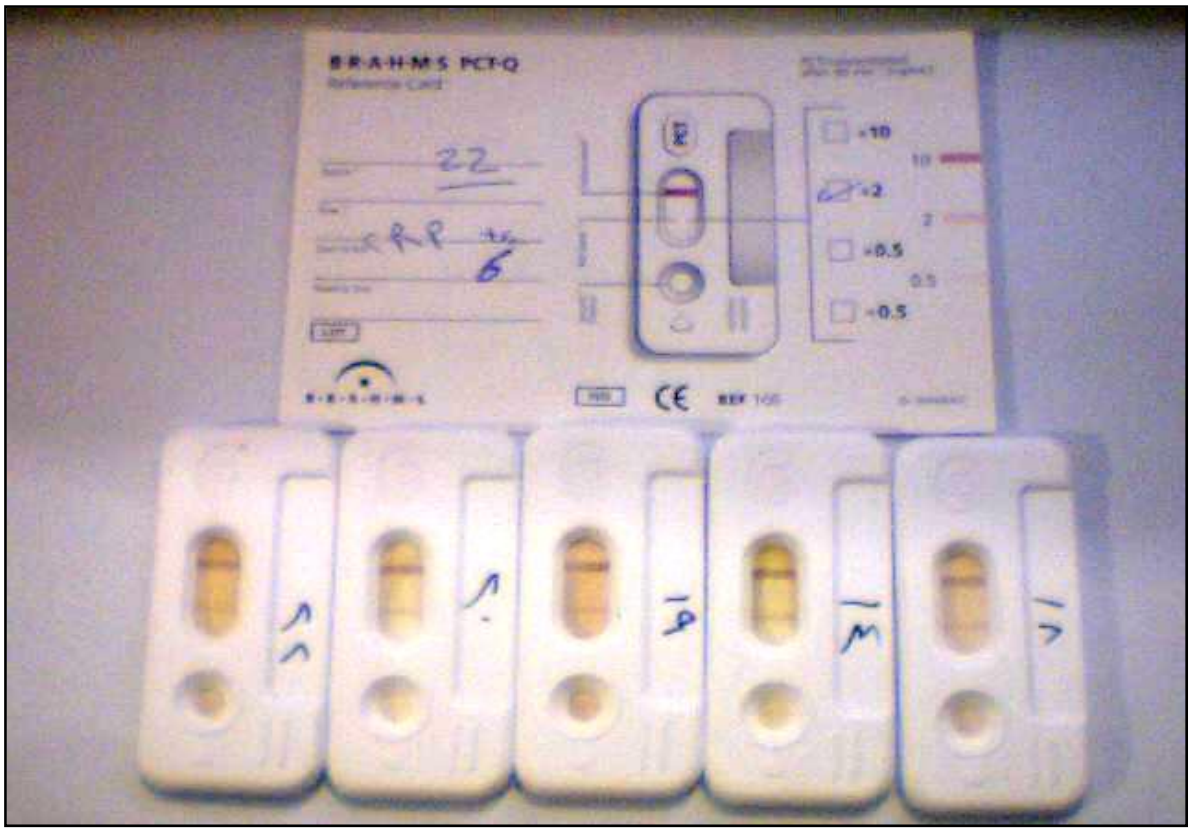
Figure (24): Means of total white blood cells and segmented leucocytes in blood in Spontaneous bacterial peritonitis (SBP) and control.

Picture (1): PCT less than 0.5

This is included the control group and the 2 negative results.



Picture (2): PCT ≥ 0.5 ng/mL& less than 2



Picture (3): PCT ≥ 2 ng/mL& less than 10

Picture (4): PCT ≥ 10 ng/mL