Results

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Table (1)

Showed distribution of studied groups according to sex females were significantly affected among cases than males (11:4) i.e. 73.3% : 26.7% and P test < 0.05. No significant difference among controls , males / females (5:5)i.e. (50%:50%).

Table 2

Showed some sociomedical variables for cases and controls . Mean age for cases was 9.9 years but for control was 11.1 years. Mean weight for cases was 35.1 kg for control was 37.8 kgm. Mean Height by cm for cases was 134.9 for control was 134.7. Blood pressure mean systolic/ Diastolic for cases were 95.3/60.3 mmHg but for control were 89/60 mmHg. Mean temperature for cases was 38.3°c but for controls was 37°c .The temperature is highly significant for cases P test < 0.001 but for other item not significant P test > 0.05 .

Table 3

Showed renal function test among cases and controls . Mean creatinin for cases was 1.27mg /dl but for control was 0.8 mg/dl.

Mean blood urea for cases was 35.3mg/dl but for control was 29mg/dl. Serum creatinin was highly significant for cases P test >0.01 and blood urea was not significant for cases P test > 0.05 .

Table 4

Showed pus cells and RBCs in urine among cases and controls. Mean number of pus cells 102.7 ± 23.9 for cases but it was 0.2 ± 0.6

in controls. Mean number of RBCs for cases was 50.5 ± 58.8 but it was in controls 0.4 ± 0.8 which was highly significant for pus cells P test < 0.001 significant for R.B.Cs P test <0.01 for cases .

Table 5

Showed mean Procalcitonin for cases bèfor treatment was 1.67 ± 0.9 ng but for controls was 0.37 ± 0.2ng and this is highly significant P<0.001. Mean prcalcitonin for cases after Discharge was 0.76 ±36 ng. Procalcitonin level in cases was highly significant reduced after treatment P < 0.001.

Table 6

Showed the mean levels of procalcitonin in upper and lower UTIs cases were 2.38ng , 1.19 ng before treatment and were 1.02ng ,0.59ng after treatment. The level were significantly higher in upper UTIs compared to lower UTIs in both situation .And also showed that procalcitonin level significantly reduced after treatment in both upper and lower UTIs P <0.001.

Table 7

Showed that 20% of the studied cases of UTIs (upper) remain with higher level of serum procalcitonin than the level of normal healthy controls after completing the course of antibiotic for the recommended times.

But urine culture was negative and CRP was normal after this times.

Table 8

Showed types of organism result from urine culture was 8 cases about (61.5%) were E coli, 3 cases about (23%) were staph auerus and 2 cases were anther organism (15.5%).

Table 9

Showed CBC and C-reactive protein for cases and controls groups . Are highly significant test for Hb, platelet, H.T , McHc CRP P test <0.001 and significant for MCV P test < 0.05 and not significant for RBCs, WBCs and MCH P test > 0.05. Mean for items of CBC for cases varsus to controls were respectively (HB) were 11.4 vs 12.6 gm (RBCs) were 4.42 vs 4.62 , (WBCs) were 9.23 vs 9.32 , (plat) were 127.66 vs 209 (HT) were 35.6% vs 32.6% (MCV) were 82.6 vs 81.3 (MCH) were 27.4 vs 27.6 (MCHC) were 32.9 vs 37.5 and (CRP) were 37.3 vs 6 .

Table (1o)

Showed sensitivity & specificity of procalcitonin, urine culture, C-reactive protein, W.B.Cs for studied groups. Urine analysis for cases showed pus cells ≥ 20. 10 healthy children used as controls groups. It was used as standard test.

Sensitivity & specificity of procalcitonin, urine culture, C-reactive protein, W.B.Cs were (80%,90%) , (86.6%, 80%) , (66.7%, 70%), (66.7%, 60%) respectively. Predictive value for +ve cases and Predictive value for -ve cases procalcitonin, urine culture, C-reactive protein, W.B.Cs were (92%, 75%) , (86.6%, 80%) (76%, 58.3%), (71.4%, 54,5) respectively.

Table (1) Shows distribution of the st. groups according to sex .

St.gr. / Sex	Cases		Control		Total		X^2	P
	NO	%	NO	%	NO	%		
Males	4	26.7	5	50.0	9	36.0	0.59	>0.05
Females	11	73.3	5	50.0	16	64.0		
Total	15	100.0	10	100.0	25	100.0		
Z	2.04							
P	<0.05							

Table (2) Shows some sociomedial variables for cases and controls

St.gr. / Diff. variables	Cases n=15 $\bar{X} \pm SD$	Control n=10 $\bar{X} \pm SD$	T	P
- Age (years)	9.9±3.6	11.1±3.3	-0.87	> 0.05
- Weight (Kgm)	35.1±16.9	37.8±14.1	-0.44	> 0.05
- Height (Cm)	134.9±17.8	134.7±20.2	0.03	> 0.05
- Systolic (mm(Hg)	95.3 ± 13.7	89.0±7.4	1.5	>0.05
- Diastolic (mm/Hg)	60.3±9.3	60.0±6.7	0.1	>0.05
- Temp.C	38.3±0.7	37.0±0	6.6	<0.001

Table (3) Shows creatinin and urea among cases and controls .

St.gr. / variable	Cases n=15 $\bar{X} \pm SD$	Control n=10 $\bar{X} \pm SD$	T	P
- Cr. (mg)	1.27±0.6	0.8±0.1	3.08	<0.01
- Urea (mg)	35.3±12.3	29.0±7.7	1.58	>0.05

Table (4) Shows Pus cells and RBCS in urine among cases and controls.

St.gr. / variable	Cases n=15 X- ± SD	Control n=10 X- ± SD	T	P
- Pus	102.7±23.9	0.2±0.6	16.55	<0.001
- RBCS	50.5±58.8	0.4±0.8	3.3	<0.01

Table(5) Shows serum Procalcitonin for cases and controls groups pre and post treatment.

St.gr. / S.pro. calcitnic	Cases n=15 X- ± SD	Control n=10 X- ± SD	T	P
- Pre TTT	1.67± 0.9	0.37±0.2	5.51	<0.001
- Post TTT	0.76±0.36	0.0	———	———
X- SD of the diff SE Paired "t"	0.91±0.7 0.18 5.04 P<0.001	———	———	———

Table (6) Shows serum Procalcitonin for upper and lower urinary tract infection pre-treatment and post-treatment.

Procale	Upper n=6 X- ± SD	Lower n=9 X- ± SD	T	P
- Before TTT	2.38 ±1.02	1.19±0.2	2-83	<0.01
- After TTT	1.02±0.38	0.59±0.23	2-53	<0.05
X- SD of the diff SE Paired "t"	1.36±0.8 0.14 9.71 P<0.001	0.6±0.14 0.11 5.45 P<0.001	——	——

Table (7) Number and Percent of cases in which Procalcitonin, CRP, urine culture are changed after treatment .

	Procalcitonin level after TTT		CRP after TTT		Urine culture after TTT	
	No	%	No	%	No of –ve	%
1-Decrased below normal	12	80.0	15	100.0	15	100.0
2- Not decrased below normal	3	20.0	0	0	0	0
Total	15	100.0	15	100.0	15	100.0

Table (8) Shows type of organism in +ve urine culture in our cases.

type of organism in +ve urine culture	Total	
	No	%
E-coli	8	61.5%
staph auerus	3	23%
other organism	2	15.5%
	13	100.0%

Table (9) Shows CBC & C-reactive protien for cases and controls .

St.gr. / CBC	Cases n=15 X- ± SD	Control n=10 X- ± SD	T	P
1- HB (g/dl)	11.4±1.1	12.6±0.44	-3.77	<0.001
2-RBCS (10^6./cmm)	4.42±0.37	4.62±0.27	- 1.56	>0.05
3-WBCS (10^3/cmm)	9.23±1.3	9.32±0.31	- 0.27	> 0.05
4- Platelet (10^3/cmm)	127.66±33.3	209±7.7	-4.06	<0.001
5- HT (%)	35.6±1.4	32.6±0.5	7.4	<0.001
6- MCV (fl)	82.6±1.8	81.3±0.7	2.25	<0.05
7-MCH (pg)	27.4±0.36	27.6±0.33	-0.9	>0.05
8-MCHc (gldl)	32.97±2.4	37.54±0.2	- 7.39	<0.001
9- CR protien.(mg)	37.3±19.5	6.0 ±3.2	-3.35	<0.001

Table (1o) Shows sensitivity & specificity of procalcitonin , urine culture, C-reactive protein, W.B.Cs, for all cases with pus cells ≥ 20 considared + ve for diagnosis UTIs.

Screing test	Confermatory test			
	Pus cells ≥ 20			
	Cases	Controls	No.	%
Procalcitonin				
+ve	12	1	13	52%
-ve	3	9	12	48%
	15	10	25	100%
Urine culture				
+ve	13	2	15	60%
-ve	2	8	10	40%
	15	10	25	100%
C-reactive protien				
+ve	10	3	13	52%
-ve	5	7	12	48%
	15	10	25	100%
WBCs				
+ve	10	4	14	56%
-ve	5	6	11	44%
	15	10	25	100%

Sensitivity of Procalcitonin = 80% , specificity of Procalcitonin = 90%
Sensitivity of Urine culture = 86.6% , specificity of Urine culture = 80%
Sensitivity of C-reactive protien = 66.7% , specificity of C-reactive protien = 70%
Sensitivity of W.B.Cs = 66.7% , specificity of W.B.Cs= 60%
Predictive value for +ve cases for Procalcitonin , Urine culture , C-reactive protein, W.B.Cs are 12/13= 92%, 13/15= 86.6% , 10/13= 76%, 10/14=71.4% respectively
Predictive value for -ve cases for Procalcitonin , Urine culture , C-reactive protein, W.B.Cs are 9/12= 75%, 8/10=80%, 7/12=58.3%, 6/11=54,5% respectively .