CLUSTER OF DIFFERENTATION 4/CLUSTER OF DIFFERENTATION 8 RATIO OF T-LYMPHOCYTE SUBSETS IN EGYPTIAN PATIENTS WITH SEVERE PREECLAMPSIA

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Introduction

Preeclampsia known as a disease of vasospasm caused by extensive vascular endothelial dysfunction which occurs after 20 weeks gestation and can appear within 6 weeks after delivery. Hypertension and proteinuria are characteristics associated with presence or absence of edema. Preeclampsia is a condition that affects pregnant women by 5-14% of all pregnancies. The T- helper lymphocytes express the cluster differentiation 4 (CD4+) molecules whereas the cytotoxic T-cells express cluster differentiation 8 (CD8+) molecules. Both CD4+ cell and CD8+ cell count are used to assess the strength of an individual's immune response. Other assays that can be used to evaluate of immune condition include CD4/CD8 ratio, CD4 as well as CD8 percentages.

Aim of the Work

The aim of this work is to estimate CD4 and CD8 levels in peripheral blood and to get CD4/CD8 ratio in preeclamptic Egyptian patients to evaluate the immunological role in preeclampsia.

PATIENTS

This case control study was conducted on 50 pregnant women in third trimester admitted to El-Shatby Maternity University Hospital 25 cases with severe preeclampsia diagnosed by clinical findings, laboratory investigations and ultrasonography admitted at eclampsia unit and 25 normal pregnant females from obstetric clinic. These 50 pregnant women were divided into two groups:

Group (A): Twenty five severe preeclamptic patients.

Group (B): Twenty five normal pregnant women as a control group

Methods

All cases were subjected to,**Complete history taking** (obstetric, medical, and surgical). **Complete clinical examination**, **Ultrasound examination** for mean gestational age, amount of liquor, estimated fetal weight, doppler ultrasound for estimation umbilical artery flow resistance.

Laboratory investigations including CBC, liver function tests, renal function tests and serum level of CD4+ cells, CD8+ cells in addition to CD4/CD8 ratio.

Results

Table (1): Comparing the studied groups regarding CD4 percentage, CD8 percentage in addition to CD4/CD8 ratio.

	Group A "Cases" "n=25"	Group B "Control" "n=25"	t-test P Value
CD4 + cells percentage in WBCs			
Range	22-52	18-52	1.92
Mean±SD	40.36±7.57	37.28±8.48	0.041*
CD8 + cells percentage in WBCs			
Range	17-35	19-49	8.25
Mean±SD	22.44±5.14	35.04±8.88	0.0001*
CD4/CD8 ratio			
Range	1-2.94	0.54-2.63	9.12
Mean±SD	1.87±0.50	1.17±0.51	0.0001*

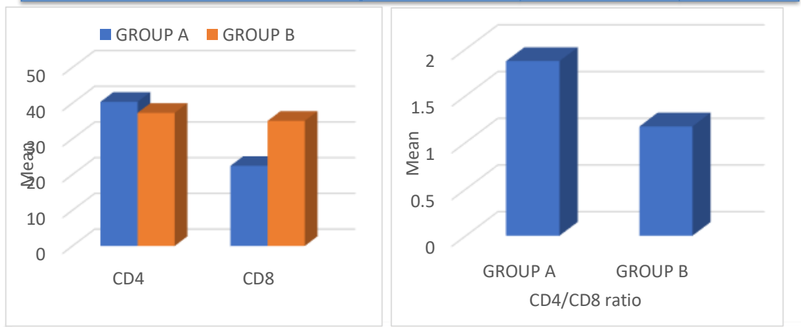

Figure (1): Comparing the two groups according to CD4%, CD8% and CD4/CD8 ratio.

Table(2): Showing sensitivity, specificity and accuracy of CD4% in diagnosing preeclampsia.

Area	Cut off value	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.617	≥39	.157	.460	.774
Sensitivity	60.0			
Specificity	65.0			
Accuracy	62.0			

Table (3): Showing sensitivity, specificity and accuracy of CD8+ cells in diagnosis preeclampsia.

Area	Cut off value	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.890	≤ 25	.000	.801	.979
Sensitivity	92.0			
Specificity	88.0			
Accuracy	90.0			

Table (4): Showing sensitivity, specificity and accuracy of CD4/CD8 ratio in predict preeclampsia.

Area	Cut off value	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.844	≥1.5	.000	.734	.954
Sensitivity	90.0			
Specificity	82.0			
Accuracy	86.0			

Conclusion

Serum level of CD4+ cells, CD8+ cells in addition to CD4/CD8 ratio was found to be significantly different in severe preeclamptic than in normal group (increase in CD4+ cells and decrease in CD8+ cells with increase in CD4/CD8 ratio).

The study also found a positive correlation between level of serum CD4+ cells, CD8+ cells in addition to CD4/CD8 ratio and severity of preeclampsia.

From this study the estimation of CD4+ cells, CD8+ cells may be used as a marker to predict preeclampsia and confirm its severity.