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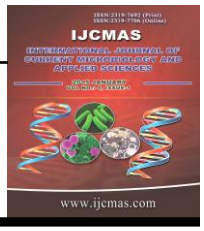

Original Research Article

Some biochemical parameters in cytomegalovirus (CMV) women patients before and after treatment

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Keywords

Cytomegalo-virus, biological changes, cyclovir.

A B S T R A C T

The present study designed to investigate changes occurring in some biochemical changes in women suffering from cytomegalovirus and given drug (cyclovir). A total number used was 77 women and healthy subject. The number of control 77 before treatment and after treatment. The ages of all subject ranged between (20-40) years. It was found that cytomegalovirus have highly significant after 70 days follow up ($p<0.05$) of GPT, GOT, TSB, Na, K+, Blood urea, S. creatinine. The level of GPT, GOT, TSB showed significant increase ($p<0,05$) when compared with control women after 90 days whereas the value, of K+ in serum showed significant increase ($p<0,05$) in cytomegalovirus after 70 days. In view of the changes summarized, the increase in some biochemical parameters may be attributed to hyper metabolic state which arise due to, cytomegalovirus which in turn affect most of body tissue. The aim of the present study was designed to clarify the determination of the level of GPT, GOT, TSB, TSP, Blood urea, creatinine after given drug (cyclovir) after 70, 90 days. Investigation the effects of cytomegalovirus in the available minerals (Na+,K).

Introduction

Human CMV infection can cause sever disease in neonates and immuno compromised person(1), and infectious mononucleosis is in healthy adult. The human cytomegalovirus (CMV) is a major cause of congenital infections (2). CMV is a herpes virus responsible for substantial morbidity and mortality among human immunodefeciency virus (HIV) infected person(3), transplant recipient (4) and congenitally infected children(5), CMV enters latency following primary infection and Ca, subsequently reactivate with a different virus strain can also occur. During these events, CMV is shed in bodily fluids.(6) like other herpes viruse, cmv enters latency following primary infective but can subsequently reactivate (7). Active virus replication and re infection with a different cmv strain, but such replicative is

suppressed during latency. Among pregnant women, virus replicative in uterine and placental compartment is probably necessary for fetal infection to occurs(8). Congenital CMV infection occurs when virus from the mother crosses the placenta and infects the immunologically immature fetus (9).

The consequences or sequelae of congenital CMV infection include fetal death, infant death some studies have presented some evident that CMV infection lead to miscarriage and still birth (10, 11, 12, 13). The aim of the present study was designed to clarify the determination of the level of GPT, GOT, TSB, blood urea, creatinine after given drug (cyclovir) after 70, 90 days. Investigation the effects of CMV in the available miaerals Na+, K+.

Materials and Methods

The study was carried out three months period from January 2012 to April 2012 in ALzahraa teaching hospital, Alkarama teaching hospital and privat lab Wasit province. The subject of the study were 77 women suffering from CMV diagnosed by ELISA technique.

33 patients out off 77 patients was recovery by decline the titer of anti CMV after 70 days and 33 patients recover after 90 days. 77healthy control women age ranged (20-40) years.

Methods

Blood was collected from patients in plan tube and removed 30 minute for clotting, than centrifuged to separate the serum for diagnosis of CMV by ELISA technique and for the biochemical tests. The cut off value of the CMV ki was (1). The biochemical test was assayed by reflatron machine (rochecompany).

Statistical analysis

All values were expressed as means ± SE. The data were analyzed by using of computer SPSS program. Student t-test was used to examine the difference between different groups and taking ($p<0.05$) us the lowest limit of significant (14).

Result and Discussion

The results in table (1) shows all biochemical parameters of the study (GPT, GOT, TSB, TSB, Na+, K+ and B-urea, Creatinine) were significant increase in (44) CMV patient before treatment by cyclovir when comparison with control group except the (k+) was non significant differ from control also after 70 days of treatment all parameters were significant increased than in control group except the Na^+. Whereas the results in table (2) shows all biochemical parameters in (33) CMV patients before treatment was significant increase than in healthy control except (K+) while all parameters was significant increase after 90 days treatment by acyclovir when comparison with control except Na+ and K+

There is a lack of knowlealge about the changes in physiological and biochemical values of CMV infection in women in Iraq.

The present study was performed to investigate the biological changes of CMV infection to women in Iraq correlates with CMV, cyclovir treatment. We are not aware of previous reports about the use of cyclovir in this disease in women in Iraq. Therefore we can't compare our results with others in Iraq. Maternal CMV infection maybe treated with immune boosting drug to help decrease the risk of the baby being born with symptoms of CMV infection. There are no treatments for prenatal or postnatal therapy of the infection vaccines for treatment is still

in the research and development stages. Cyclovir is the generic name of a prescription used to treat certain virus infection.

This drug works by preventing viruses from dividing and multiplying. Acyclovir belongs to class of drug called synthetic nucleotide analogues. It is important to know that cyclovir does not cure viral infections. However it can make infections shorter and less serious for some people. Serum GPT, GOT activities are excellent markers of hepatocellular injury, GPT for assay liver injury (15), while the increase in the urea concentration may be due to CMV deletrion effect on the kidney which decrease the excretion of urea from the body and subsequently increased its serum level.(16). Furthermore, increase in urea and creatinine concentration in infected group may be explained CMV cases glomerular lesion and urinary abnormalities which lead to real failure. Renal failure is describes as decrease in glomerular filtration rate. Biochemically renal failure is typically detected by an elevated serum creatinine level in the urine (17). CMV may infect and damage, kidney, which increase protein excretion in the urine and lead to hypogloburimia (18).

Table.1 Women infected by (CMV) newly diagnosed before and after treatment 70 days with cyclovir

Test (for 44 patient)	Control	Before treatment	After 70 days
GPT	28.54±5.23	41.31±5.51**	36.88±4017**
GPT	14.56±2.06	21.36±3.59**	17.5±1.98**
TSB	0.56±0.17	1.08±0.27**	0.73±0.19**
TSP	6.81±0.23	7.65±0.36**	7.17±0.29**
Na^+	1.38±8.71	1.43±10.85**	1.39±0.43**
K^+	5.46±0.50	5.46±064	5.76±0.43**
B.Urea	26.63±4.77	41.81±8.46**	38.95±5.78**
S.Creatinin	0.48±0.19	0.75±0.19**	0.69±0.11**

P>0.05; **= Highly Significant

Test (For 44 Patient)	Before Treatment	After 70 Days
Titer	1.61±0.27	0.77±0.11**

P>0.05; **= Highly Significant

Table.2 Women infected by (CMV) newly diagnosed before and after treatment 90 days with cyclovir

Test (for 33patient)	Control	Before treatment	After 70 days
GPT	28.36±5.27	43.18±3.11**	38.06±2.53**
GPT	14.39±2.07	22.06±2.86**	17.54±1.95**
TSB	0.55±0.17	1.19±0.28**	0.76±1.59**
TSP	6.78±0.23	7.85±0.44**	7.11±0.30**
Na^+	1.37±8.59	1.47±10.95**	1.37±6.04**
K^+	5.49±0.52	5.30±0.59	5.74±0.83**
B.Urea	26.69±4.59	48.00±10.49**	38.87±4.76**
S.creatinin	0.48±0.20	0.73±0.21**	0.65±0.11**

P<0.05; **= Highly Significant

Test (For 44 Patient)	Before Treatment	After 70 Days	After 90 Days
Virus Titer	2.33±0.28	0.76±0.10**	0.76±0.10**

P<0.05; **= Highly Significant

In conclusion, this study indicates that CMV infection affects liver and kidney functions as evidenced by the significant increase in the levels of some biochemical parameters in patients group, this may possibly effect some specific enzyme system, which can consequently exhibit serum, pathology, including, hepatitis, pneumonia, blindness and sever neurological disorders (19).

References

1.Bowman, J. Jason; Burbelo Peter D.; Gill Rachel B,; Sauri Michecl A.; Schmi Hjamesm and Cohen Jeffrayl. A sero-prevalence study of primate workers of or a symptomatic cytomegalovirus infection. Journal of clinical virology.2014, Vol. 60 (4), Pp: 411-413.

2.Aljumail Zainab; Khali Mohamed; Alsamarie Abdulghani Mohamed and Najem Wesam Suhail. Cytomegalovirus seroprevalence in women with bad obstetric history in krkuk, Iraq. Jonrnal of infection and public Health. July Agust 2014, Vol (4). Pp: 277- 288.

3.Emercy, V.C.; Sabin, C.; Feinberg, J. E.; Crywacz, M.; Knights, S.; Griffiths, P.D. and for the AIDs clinical trials Group 204 Glaxo welcome 123-014 international cmv prophylaxis study Group (1999). Quantitative effects of valacyclovir on the replicate of cytomegalovirus (cmv) in persons with advanced human immunodefeciency virus disease: baseline cmv load dictate time to disease survival. J. lnfect. Dis. Vol. 180, Pp:692-701.

4.Cope, A. V.; Sweny, P.P.; Sabin, C.; Rees, L.; Griffiths, D.D. and Emey, V.C. Quantity of cytomegalovirus is a major risk factor for cytomegalovirus disease after renal transplantation. J. Med. Virol. 1997; Vol. 52, Pp: 200–205.

5.Canon, M.J.; Dollard, S.C. and Smith, D.K. Washing our hands of the congenital cytomegalovirus disease epidemic. BMC public Health. 2005, Vol.5, Pp: 70.

6.Schoenfisch Ashleyl; Dollard Sheilnc; Amin Minal; Gardner lyttl; klein Roberts; Mayer Kenneth; Rompulo Anne; Sobel Juck D. and Cannon Mechael J. Cytomegalovirus (CMV) shedding is highly correlated with markers of immunosuppresion in (cmv) sero positive Women. Journal of Medical Microbiology. (2011), Vol. 60, Pp: 768-774.

7.Mocarski, E.S.; Jr, Shent, T. and Pass, R. F. Cytomegalovirus infields virology, 5th ed. 2007, Pp: 2702-2772. Edited by D.M Knipe and P.M Howly. Phladelphia: Lippincon Willams and Wilkins.

8.Perera, L.; Maidji, McDonagh, S. and Tahata, T. Insight into viral transmission at the uterine placental interface. Trends Microbiol. 2005. Vol. 13, Pp: 164-174.

9.Lanzieri Tatiana M.; Dollard Sheila, C.; Bialekssteph, R. and Grosse Scott, D. Systematic review of the birth prevalence of Congenital cytomegalovirusIn fectoin in developing countries. International

Journal of infection diseases. 2014, Vol. 22, Pp: 44-48.

10. Enders, C.; Bader, V.; Lindemann, L.; Schalstn, G. and Daimnyer, A. Prenatal diagnosis of congenital cytomegalovirus infection in 189 pregnancies with known outcome prenat. Diagn. 2001: Vol. 21, Pp: 362-77.
11. Boppana, S.; Pass, R.F.; Britt, W.J.; Stago, S. and Alford, C.A. Symptomatic Congenital cytomegalovirus Infection: neonatal morbidity and mortality. Peditr: Infect. Dis. J. 1992; Vol. 11, Pp: 23-90.
12. Khudir Mohammed Khaleefah and Molan Abdul–Lateef. Seroprevalence of cytomegalovirusAmong healthy student at Diyala University. Journal of Pharmacy and Biological. 2014, Vol. 9. Pp: 59 -61.
13. Bishop, M. L.; Dube–Engellcnk, J. L. and Fody, E. P. (2000) Clinical chemistry: Principles correlate Procedures, 4th ed. J. B. Lippincott Williams and Wilkins. Philadelphia (405- 416).
14. Burtis, C. A. and Ashwood, E. R. Tietiz Fundamentals of Clinical chemistry, 4th ed. W. B. Saunders Comp. USA. 1999, Vol. 2. Pp: 1500-1503.
15. Radostitis. O. M.; Gay, C. C.; HinChclitt, K.W.O and Constable, P. D. (2007). Veterinary Medicine. A text book of the disease of cattle, horse, sheep, pigs and goat. Sannders. Pp: 1518-1522.
16. Mahboub, H. D.; Helal, M. A.; AbdEldni, M.A.; Abd E1-Razek, E.M. and Elsify, A.M. Sero-prevalence of Abortion Causing Agents in Eqyptian sheep and got Breeds and their effects on the animals performance. J. Agri.sci, 2013, Vol. 5(9). Pp: 92 -101.
17. Gharadaghi, Y.; Shojues, S.; khak, A. A.; Fathiuzad, F.; Khaki, A.; GhDamkher, E. and Ronhaninae, M. Antiprotozoal effect of Allium Cepaon on Acute Renal Failure Causes by *T. gondii*. Afr. J. Pharm. Pharmacol. 2012. Vol. 6 (10), Pp: 771-777.
18. Montage, J. and Liesanfeld, O. (2004). Toxoplasmosis. Lancet, 363 (9425). Pp: 1915-1976.
19. Al-Fartusie, F.S.; Marzook, A. T. and Morad, T.S. Study of some trace element and Antioxidants vitamin in sera Al-Mustansirya. J. Sci. 2012, Vol. 23(3). Pp: 199-206.