Cytomegalovirus in Immunocomptent Individuals and Immunocompromised Patients

Essay

Submitted in Partial Fulfillment of the Requirements Master Degree In Internal Medicine

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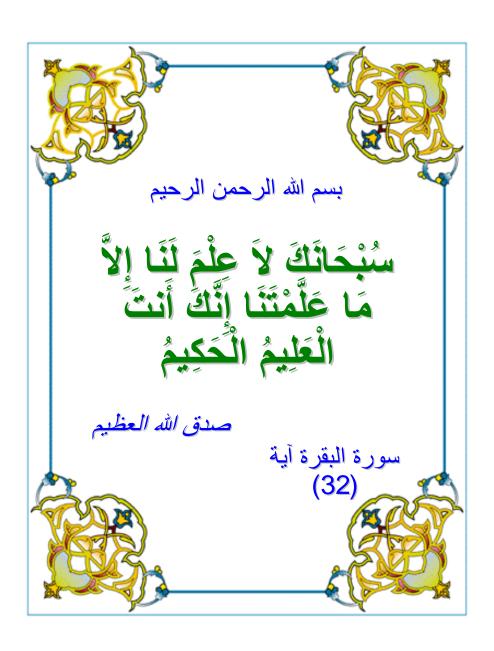
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List of Contents

Title	Page
Chapter 1: Human cytomegalovirus	1
Chapter 2: CMV in immunocomptent individuals	44
Chapter 3: CMV infection in immunocompromised	
patients	79
Discussion	118
Recommendations	129
References	131
Arabic summary	

List of Abbreviations

ab Antibody

AIDS Acquired immunodeficiency syndrom

AMP Adenomonophosphate

BMT Bone marrow transplantation

CD4+ Cluster of differentiation 4

CDV Cidofovir

CID Cytomegalic inclusion disease

CMV-IGIV CMV-intravenous immunoglobulin

CNS Central nervous system

CPE Cytopathic effect

CTL Cytotoxic lymphocyte

D+ Donor seropositive

DNA Deoxyribonucleic acid

E Early (CMV protein)

EBV Epstein-Barr virus

ERGIC Endoplasmic reticulum-golgi intermediate compartment

FDA Federal Drug Adminstration

gB Glycoprotein B

GCV Gancyclovir

gH Glycoprotein H

GIT Gastrointestinal tract

gL Glycoprotein N

gM Glycoprotein M

gN Glycoprotein N

gO Glycoprotein O

G0 Gape 0/growth arrested

HAART Highly active anti-retroviral treatment

HCMV Human cytomegalovirus

HCMV DB HCMV dense bodies

HHV-6 Human herpes virus 6

HHV-7 Human herpes virus 7

HIV Human immunodeficiency virus

IE Immediate early (CMV protein)

IFN- γ Interferon γ

IgG Immunoglobulin Gamma

IgM Immunoglobulin Mu

IL Interleukin

Kda Kilodalton

KSHV Kaposi's sarcoma-associated herpes virus

L Late (CMV protein)

MHC Major histocomptability complex

MIE Major immediate early

Mrna Messanger ribnucleic acid

NF-NB Nuclear factor B

NK Natural killer

PBL Peripheral blood leukocytes

PCR Polymerase chain reaction

PFA Pyrophosphate analog foscarnet

PP65 Phosphoprotein of 65 KD

PTLD Post-transplant lymphoproliferative disease

R- Recipient seronegative

RNA Ribonucleic acid

TNF Tumour necrosis factor

UL Unique long (gene product)

VZV Varicella zoster virus

List of Tables

Table	Title	Page
Table (1)	Review of case reports of sever CMV infections in immunocomptent patients.	61
Table (2)	Incidence of CMV disease in solid organ transplant recipients.	85
Table (3)	Definition and diagnosis of CMV infection and disease in solid organ transplant recipients.	94

List of Figures

Figure	Title	Page
Figure (1)	Schematic of the HCMV virion.	5
Figure (2)	Overview of the HCMV life cycle.	11, 12
Figure (3)	Typical time course for development of CMV-specific-IgG and IgM from a primary infection.	23
Figure (4a)	CMV oesophagitis.	80
Figure (4b)	CMV ventriculoencephalitis.	80
Figure (5)	Risk factors for development of late CMV disease.	97
Figure (6)	CMV retinitis in patients with AIDS.	117

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INTRODUCTION

Cytomegalovirus (CMV) is a member of betaherpesvirinae in the subfamily herpesviridae.CMV infection is found worldwide.over 50% of adult population have serological evidence of latent infection, although infection is symptomless. (1)

Humoral immunity and Cellular immunity play an important role in CMV infection.the specific T-cell response against CMV is based on their memory function, including their ability in mediating, effectors, proliferation, and secretion of chemokines. The combination of CD4&CD8 response is critical for the infection control. (2)

Congenital CMV infection is the leading non genetic cause of neurosensory hearing loss in developed countries. although central nervous manifestations at birth in children with symptomatic congenital CMV infection predict cognitive and motor deficits, they do not predict hearing loss. (3)

Primary CMV infection in immunocomptent persons has been associated with Prolonged fever, more or less typical infectious mononucleosis, biochemical or clinical hepatitis, skin rash, colitis, pneumonitis, adrenalitis, myocarditis, and, rarely, Encephalitis or other involvement of the CNS. (4) A hall mark of CMV infection is life-long latency after primary infection. Although evidence of CMV reactivation has been demonstrated in immunocomptent individuals and in patients with severe sepsis or other forms of stress. The clinical relevance of such reactivation is unclear and it probably has no therapeutic consequences. (5)

CMV infection in humans is a major cause of morbidity and mortality in immunocompromised hosts. Among bone marrow and solid organ transplantation recipients, active infection is related to [1] the presence of late CMV infection in the donor or recipient [2]the organ transplanted, and[3] the intensity of immunosuppressive therapy. (6)

CMV has both direct and indirect effects on transplant graft and native organ function. Direct effects include bone marrow suppression, pneumonitis, myocarditis, encephalitis, hepatitis, nephritis, retinitis, enteritis and pancreatitis. The major indirect effects include graft rejection, secondary bacterial or fungal Infections, development of Epstein-Barr virus associated post-transplant lymphoproliferative disease, accelerated atherosclerosis. (7)

AIM OF THE STUDY

Comparison between cytomegalovirus in immunocomptent individuals and immunocompromised patients.

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