

الآية القرآنية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

فَالْإِنْعَامُ عِنْدَ اللَّهِ وَأَبْلَغُكُمْ مَا أَرْسَلْتُ إِلَيْهِ وَلَنِكَفِيَ أَرْنَكُمْ فَوْمًا

حَدَّقَ اللَّهُ الْعَظِيمُ

الآيات الافتتاحية

Dedication

To my parents

Who are the candles that glow to shine my way to success

To my beloved brothers and adorable sisters

Who inspired me with trust and confidence

With love and appreciation

Acknowledgments

All praises to Almighty Allah who gave me the ability and strength to complete this study.

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Abstract

The main aim of this study was to determine the seroprevalence of human cytomegalovirus (HCMV) IgG antibodies using the Enzyme-Linked Immunosorbent Assay (ELISA), among 75 blood donors and 40 apparently healthy individuals as control group with ages ranging from 18-52 years.

The blood samples were, aseptically, collected from 75 blood donor volunteers attending the blood bank of Khartoum, Khartoum North and Omdurman Chinese-Friendship Teaching Hospitals and 40 normal individuals. While 73 blood donors have been found positive (97.3%) for anti-CMV IgG, 39 subjects were positive (97.5%) among the control group.

All of the possible risk factors have been examined in this study, i.e. age, sex, marital status, major blood groups and previous blood transfusions had no significant effect ($P>0.05$) on CMV IgG antibodies among both the blood donors and the control group. The results of this study have strongly been in line with the previous findings that CMV is one of the most commonly prevalent viral infections in Sudan (80-100%). Although primary CMV infection among normal immunocompetant individuals is not one of the clinically serious viral infections in Sudan, further in-depth studies are needed to elucidate this disease, because of its serious complications (e.g. abortions and congenital defects) among the immunocompromised persons (AIDS, hemodialysis and transplant recipient patients). Furthermore, we strongly recommend the screening of blood for CMV antibodies among blood and organ transplant donors.

خلاصة البحث

الهدف الرئيس من هذه الدراسة هو تحديد مدى انتشار الأجسام المضادة من النوع **IgG** لفيروس مضخم الخلايا البشري باستخدام مقاييس الامتصاص المناعي المرتبط بالإنزيم (البزرا). شمل الاختبار متبرعين بالدم طوعياً وعددهم 75 شخصاً مرافقاً لهم 40 شخصاً آخرين أصحاب ظاهيرياً (العينة الضابطة) في مدى عمر يترواح بين 18-52 سنة. جمعت عينات الدم و عددها 75 من المتبرعين الطوعيين في كل من بنوك الدم للمستشفيات التعليمية التالية: مستشفى الخرطوم والخرطوم بحري ومستشفى الصداقة الصيني أم درمان و 40 عينة لأشخاص طبيعيين. بعد إجراء الاختبار المصلى وجد إن 73 شخص من المتبرعين بالدم أعطوا نتائج إيجابية بنسبة 97.3% للأجسام المضادة من النوع **IgG** لفيروس مضخم الخلايا بينما أعطي 39 شخص من العينة الضابطة نتائج إيجابية بنسبة 97.5%. شملت هذه الدراسة كل العوامل التي تزيد من معدل الإصابة بفيروس مضخم الخلايا (مثل العمر والجنس والحالة الاجتماعية وفصيلة الدم وتكرار عمليات نقل الدم) حيث تبين أنه ليس لها دلالة إحصائية (القيمة الاحتمالية أكبر من 0.05) للأجسام المضادة من النوع **IgG** لفيروس مضخم الخلايا لكل من المتبرعين بالدم و العينة الضابطة. النتائج المتحصل عليها في هذه الدراسة تدعم بقعة مأوجد من قبل بان فيروس مضخم الخلايا هو أحد الفيروسات الشائعة في السودان بنسبة 80-100%. وعلى الرغم من ذلك تعتبر الإصابة الأولية بفيروس مضخم الخلايا البشري لدى الأشخاص الطبيعيي المناعة بأنه أحد الفيروسات غير المهمة سريرياً في السودان، و نحن بحاجة لدراسات أعمق حول أسباب المرض و انتشاره و ذلك لمضاعفاته الخطيرة و التي تتمثل في الإجهاض و التشوهات الخلقية لدى الأشخاص واهنى المناعة مثل المصابين بالأيدز و مرضى الغسيل الكلوي الدموي ومرضى زراعة الأعضاء. بالإضافة لذلك نوصي بشدة بضرورة إجراء المسح المصلى للأجسام المضادة لفيروس مضخم الخلايا لكل من المتبرعين بالدم و الأعضاء.

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Abbreviations

ABO: A, B, O Blood Grouping

Abs: Antibodies

Ags: Antigens

AIDS: Acquired Immunodeficiency Syndrome

CFT: Complement-Fixation Test

CID: Cytomegalic Inclusion Disease

CMV: Cytomegalovirus

CPE: Cytopathic effect

DNA: Deoxyribonucleic Acid

ELISA: Enzyme- Linked Immunosorbent Assay

Fc: Fragment crystallizable

gH: glycoprotein H

gB: glycoprotein B

Hb: Hemoglobin

HCMV: Human Cytomegalovirus

HHV-5: Human herpesvirus-5

HHV-6: Human herpesvirus-6

HHV-7: Human herpesvirus-7

HIV: Human Immunodeficiency Virus

ICT: Immunochromatographic Test

IFA: Immunofluorescent Assay

IgG: Immunoglobulin G

IgM: Immunoglobulin M

Kbp: Kilo Base Pair

PCR: Polymerase Chain Reaction

PP28, 150, 65: Phosphoprotein 28, 150, 65

PV: P Value

SLE: Systemic Lupus erythematosus

SPSS: Statistical Package for Social Sciences

UL-97: Unit of Large gene-97

VP16: Viral Protein 16

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Questionnaire

Sero-detection of Cytomegalovirus Antibodies among Blood Donors in Khartoum State

1. Date:

2. Name:.....

3. No.:

4. Age:.....

5. Sex:

a) Male

b) Female

6. Residence:.....

7. Marital Status:

a) Single

b) Marriage

8. Blood Transfusion:

a) Yes

b) No

9. A B O Groups:

a) A

c) A B

d) 0

10. Rhuses Factor

a) Positive

b) Negative

11. Chronic Disease:.....

12. Symptoms and Sings:.....

Treatment:.....