

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الآية الكريمة

قال تعالى :

﴿قُلْ لَوْ كَانَ الْبَحْرُ مِدَادًا لِكَلِمَاتِ رَبِّي لَنَفِدَ الْبَحْرُ قَبْلَ أَنْ تَنفَدَ كَلِمَاتُ رَبِّي وَلَوْ جِئْنَا بِمِثْلِهِ مَدَدًا﴾

صدق الله العظيم

سورة الكهف الآية (109)

Dedication

To my Late Mother Alawia Mohamed Khair Khogali.

To my Late Father Abdel Salam Ahmed Mahgoub.

To my Late Uncle Dr. Omer Ahmed Mahgoub.

To All persons who help me from birth till now.

Acknowledgments

Firstly the grateful thanks to ALMIGHTY ALLAH, the lord of earth and skies who gave me the will and strength to complete this study. I would like to express my thanks and appreciations to my supervisor Dr. Abdelbagi Elnagi Mohamed, for his unfailing patience, expert advices, supervision, guidance, efforts, suggestions and his valuable time.

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Abstract

TORCH is a medical acronym for a set of prenatal infections that are passed from pregnant women to their fetuses [Toxoplasma (TO), Rubella virus (R), Cytomegalovirus (C) and Herpes simplex virus I and II (HSV-I and HSV-II)].

The main aim of this study was to investigate the seroprevalence of anti-TORCH IgM antibodies among pregnant women attending Yastabshiroon Medical Hospital, during the period from March to August, 2011.

Blood samples were aseptically collected from pregnant women ($n=75$) as test group and non-pregnant women ($n=25$) as control group. The age of women tested for antibodies varied from 17 to 55 years with all three trimester of pregnancy. Both immunochromatography test (ICT) and Enzyme-linked immunosorbent assay (ELISA) were used to detect anti-TORCH IgM in the serum of all tested women. The results revealed that all women examined were negative for both *Toxoplasma gondii* and rubella specific IgM antibodies.

However, 8 out of 75 (8/75) were CMV IgM positive (10.7%), 4 (4/75) were anti-HSV-I IgM positive (5.3%), and 3 (3/75) were anti-HSV-II IgM positive (4%). All non-pregnant women examined (control group) showed no detectable anti-TORCH antibodies. ELISA was shown to be fairly more sensitive ($P < 0.05$) in detecting anti-TORCH antibodies in comparison to ICT. There was no significant difference ($P > 0.05$) observed between trimester of pregnancy on CMV and HSV-I IgM antibodies. While previous abortions had no significant effect ($P > 0.05$) on detection of all TORCH IgM antibodies, significant effect ($P < 0.05$) was obtained for anti-CMV antibodies of pregnant women with previous malformed children, but not for HSV-I and HSV-II.

ملخص الأطروحة

الهدف الرئيسى من هذه الدراسة هو تحديد نسبة الاجسام المضادة من النوع IgM لكل من طفيل التوكسوبلازما وفيروس الحصبة الالمانية, الفيروس المضخم للخلايا وفيروس الهيريس من النوعين الاول والثانى فى النساء الحوامل الوافدات لمستشفى يستبشرون الطبى بالخرطوم فى الفترة من ابريل وحتى نوفمبر 2011.

اخذت 75 عينة دم من النساء الحوامل (75) وتسمى فى هذه الدراسة (مجموعة الاختبار), و 25 عينة دم من نساء غير حوامل (25) وتسمى هذه المجموعة (مجموعة ضابط الاختبار).

تتراوح اعمار النساء الحوامل وغير الحوامل فى هذه الدراسة من 17 عاما الى 55 عام وتم اختبار عينات الدم لكلى المجموعتين باختبار الكروماتوغرافيا المناعية والانزيم المناعى المرتبط .

اوضحت هذه الدراسة انه لا توجد اى اصابة مبدئية بداء التوكسوبلازما وداء الحصبة الالمانية عند النساء الحوامل وغير الحوامل , كما ان 8 من اصل 75 (8/75) من النساء الحوامل مصابات بالفيروس المضخم للخلايا بنسبة 10.7%, كما انه لا توجد اى اصابه بهذا الفيروس فى النساء غير الحوامل. اما الاصابة بفيروس الهيريس من النوع الاول فكانت اصابة 4 (4/75) من النساء الحوامل بنسبة 5.3%, واصابة 3 (3/75) بفيروس الهيريس من النوع الثانى بنسبة 4% كما انه لم يتم تحديد اى اصابة مبدئية بهذا الفيروس بنوعيه فى النساء غير الحوامل.

كما اوضحت هذه الدراسة ان اختبار الانزيم المناعى المرتبط اكثر حساسية ($P < 0.05$) فى تحديد نسبة الاجسام المضادة من النوع IgM مقارنة باختبار الكروماتوغرافيا المناعية. وجد فى هذه الدراسة انه لا يوجد اى تاثير لاثاليث الحمل فى الاصابة بفيروس المضخم للخلايا وفيروس الهيريس من النوع الاول ($P > 0.05$) بينما هناك علاقة بين مراحل الحمل والاصابة بفيروس الهيريس من النوع الثانى ($P < 0.05$) .

كما وجد فى هذه الدراسة ان النساء اللاتى يحملن تاريخ مرضى لتشوهات الجنين هن اكثر عرضة للاصابة بفيروس مضخم الخلايا ($P < 0.05$), بينما لا توجد علاقة بين عدد مرات الاجهاض والاصابة باى من الامراض المذكورة اعلاه ($P > 0.05$) .

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ABBREVIATIONS

| | |
|--------------|---|
| AIDS | Acquired immunodeficiency syndrome |
| CMID | Cytomegalic inclusion disease |
| CMV | Cytomegalovirus |
| CPE | Cytopathic effect |
| CRS | Congenital rubella syndrome |
| EIA | Enzyme immunoassays |
| GICA | Gold immunochromatography assay |
| ELISA | Enzyme-linked immunosorbent assay |
| HAI | Hemagglutination inhibition |
| HCMV | Human cytomegalovirus |
| HCV | Hepatitis C virus |
| HIV | Human immunodeficiency virus |
| HHV-5 | Human herpesvirus 5 |
| HHV-6 | Human herpesvirus 6 |
| HHV-7 | Human herpesvirus 7 |
| HSV | Herpes simplex virus |
| ICT | Immunochromatography test |
| IF | Immunofluorescence |
| LA | Latex agglutination |
| OD | Optical density |
| PCR | Polymerase chain reaction |
| RIA | Radioimmunoassay |
| SCH | Single radial hemolysis |
| TORCH | Toxoplasma, Rubella, Cytomegalovirus and Herpes |

| | |
|-----------|---------------|
| | simplex virus |
| US | United States |