

# DEDICATION

*To my parents*

*Who candle my ways in life.....*

*To my dear brother and sisters*

*Who are my source of power and strength.....*

*And to all friends and colleagues*

*Who are always supporting me.....*

*With love and appreciation*

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## Abstract

The main aim of this study was to determine the seroprevalence and the possible risk factors of hepatitis B virus infection among haemodialysis patients attending dialysis centers in Khartoum State, Sudan. One hundred and seventeen (n= 117) subjects were investigated during the period from January to May, 2010. Most of the subjects examined were males (65%), age ranging from 19-76 years. The hepatitis B surface antigen (HBsAg), the main serological marker for hepatitis B virus (HBV) infection was detected among 10.3% haemodialysis patients using both immunochromatographic test (ICT) and the enzyme-linked immunosorbent assay (ELISA). There were no remarkable difference between the prevalence of HBsAg among married dialysis patients compared to single ones. The results revealed that the highest prevalence rate for HBV infection (12%) was among the age group >61 years. There were a substantial difference between the prevalence of HBsAg among males (14.5%) compared to females (2.4%). The analyzed data revealed that patients under treatment for 70-93 months (50%) had a greater risk in HBV positivity, an indication that duration of dialysis has significant effect in contracting the disease. Both serological techniques employed were, equally, sensitive in detection of HBV infection. The results obtained in this study illustrated that the previous jaundice was a profounder to HBV infection among the subjects examined. Blood transfusion was found to be the possible risk factor for the infection , however, no other risk factors (e.g, intravenous drugs, medical intervention and previous surgery) were found to be predisposing to the infection.

## ملخص البحث

هدفت هذه الدراسة بصورة اساسية الى تحديد مدى انتشار الاصابة بالتهاب الكبد الفيروسي "ب" وتحديد عوامل الخطر المحتملة للاصابة به وسط مرضى الإستصفاء الدموي بمراكيز الغسل في ولاية الخرطوم -السودان.

شملت الدراسة مئة وسبعين عشر مريضا خلال الفترة من يناير حتى مايو 2010 .  
معظم المرضى الذين تم فحصهم من الذكور ، تتراوح اعمار المرضى بين 19-76 سنة. كانت نتيجة المستضد السطحي لفيروس التهاب الكبد "ب" والذي يعتبر المؤشر الرئيس للاصابة بالتهاب الكبد الفيروسي "ب" ايجابية في 10.3% من مرضى الغسل الكلوي باستخدام كل من تقنيتي الكروماتوغرافي والاليزا . لم تظهر الدراسة اي فروقات بارزة بين انتشار المستضد السطحي لفيروس الكبد "ب" وسط المتزوجين المرضى مقارنة بغير المتزوجين منهم. أوضحت الدراسة ان المرضى الذين تتراوح اعمارهم من < 61 سنة أكثر عرضة للاصابة بالتهاب الكبد الفيروسي "ب" (12%) مقارنة بالفئات العمرية الأخرى. وجدت هنالك فروق كبيرة بين انتشار المستضد السطحي لفيروس الكبد "ب" وسط الرجال المرضى (14.5%) مقارنة بالنساء (2.4%) . وجد ايضا ان مدة غسل الكلى ترتبط بشكل ملحوظ مع ايجابية المستضد السطحي لفيروس التهاب الكبد "ب" حيث كشفت النتائج المحللة أن المرضى تحت المعالجة من 93-70 شهرا (50%) هم الاكثر تعرضا لالتهاب الكبد الفيروسي "ب".  
كما اثبتت النتائج ان التقنيتين المستخدمتين على السواء حساستين تجاه الكشف عن المؤشرات المصلية للفيروس. خلصت الدراسة الى ان التعرض السابق لليرقان كان عامل الخطر ذو الاثر العميق الذي يسبق الاصابة بالفيروس . تبين ان النقل السابق للدم كان عامل الخطر للاصابة ، في حين ان العمليات الجراحية السابقة والتدخلات الطبية والادوية الوريدية لم تكن عوامل خطر مهيئة للاصابة.

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## List of abbreviations

<b>AIDS</b>	Acquired Immunodeficiency Syndrome
<b>ALT</b>	Alanine aminotransferase.
<b>AST</b>	Aspartate aminotransferase
<b>CDC</b>	Center for Disease Control and Prevention
<b>CTLs</b>	Cytotoxic T lymphocytes
<b>ELISA</b>	Enzyme-Linked Immunosorbent Assay
<b>ESRD</b>	End Stage Renal Disease
<b>HBcAg</b>	Hepatitis B core Antigen
<b>HBeAg</b>	Hepatitis B e Antigen
<b>HBsAg</b>	Hepatitis B Surface Antigen
<b>HBV</b>	Hepatitis B Virus
<b>HCC</b>	Hepatocellular Carcinoma
<b>HD</b>	Haemodialysis
<b>HDV</b>	Hepatitis D Virus
<b>HIV</b>	Human Immunodeficiency Virus
<b>ICT</b>	Immunoassay Test
<b>KKDC</b>	Khartoum Kidney Dialysis Center
<b>LHBsAg</b>	Large Hepatitis B Surface Antigen
<b>MHBsAg</b>	Middle Hepatitis B Surface Antigen
<b>OFRs</b>	Open Frame Reading
<b>PCR</b>	Polymerase Chain Reaction
<b>SHBsAg</b>	Small Hepatitis B Surface Antigen