# *Prevalence of HCV antibodies in hemodialysis patients in EL Menofia governorate(sector A)*

***Thesis***

**Submitted for partial fulfillment for master degree in Nephrology**

By

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***Hoda Hamoda***

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# Introduction

Hepatitis C is a disease with a significant global impact. According to the World Organization there are 170 million people infected with the hepatitis C virus (HCV), corresponding to 3% of the world's total population. There are considerable regional differences. In some countries, e.g., Egypt, the prevalence is as high as 20%. In Africa and the Western Pacific the prevalence is significantly higher than in North America and Europe***(Wasmuth, 2009)***.

The relation between HCV infection and kidney disorders is well recognized. On one hand, hepatitis C infection has been associated with essential mixed cryoglobulinemia that may lead to membranoproliferative glomerulonephritis , but on the other hand, patients with renal disease are at an increased risk of acquiring HCV because of prolonged vascular access and the potential for exposure to infected patients and contaminated equipment***(Rahnavardi et al., 2008).***

Hepatitis C is the most common liver disease in renal dialysis patients while liver disease itself is a significant cause of morbidity and mortality in patients with end-stage renal disease (ESRD) treated by dialysis or transplantation***(Rahnavardi et al., 2008).***

Hepatitis C virus (HCV) prevalence differs among hemodialysis units according to their geographical location, health care procedures, socioeconomic factors, reuse of lines, hygiene and sterilization of equipment, patient rotation of machines and the undertaking of vigorous universal precaution rules. These features influence the risk of nosocomial

transmission of HCV to hemodialysis patients **(Barril and Traver, 2003 ) .**

In Egypt, the prevalence of HCV infection was variable ranging from 49% to 64% from the year 1996 to 2003 It reached 52% at the year (**Egyptian renal registry , 2008 report** ) .

Haemodialysis (HD) patients are at high risk of infection by hepatitis C virus. Such factors as blood transfusion, immunosuppressant, and frequent parenteral interventions have been associated with an increased risk for infection . At present, nosocomial transmission within the dialysis centres, through contamination of the hands of the staff members or of items shared between patients, appears to be the principal route of HCV spreading in this populatio***n***. Mode of dialysis, number of blood transfusions, HCV prevalence in the respective unit and history of intravenous drug use have being also implicated***(Makhlough et al., 2008).***

An early and accurate HCV diagnosis in end-stage renal disease patients is important for the prevention of transmission as well as the appropriate management of the infection***(Makhlough et al., 2008)***.

Several outbreaks of HCV infection in HD units have been associated with a failure to rigidly enforce universal precautions and standard infection-control measures, such as sharing of a multi-dose heparin vial between patients with and without HCV infection and failure to change gloves between patients while performing HD treatments**(Natov and Pereira , 2009)**

Evaluating the natural history of HCV among HD patients faces great controversy because the onset is rarely

over recognized, the course of HCV is usually indolent and extends decades rather than years, and HD patients may actualy die from various comorbid conditions before the long-term consequences of HCV infection have been established***(Rahnavardi et al., 2008)***.

# Aim of the Work

The aim of this multicenter study is to retrospectively investigate the HCV seroconversion and prevalence of hepatitis C virus (HCV) infection among all hemodialysis patients in EL Menofia governorate (sector A) and delineate events and factors associated with HCV seroconversion.

# References


**- Barril G, Traver JA(2003):** Decrease in the hepatitis C virus (HCV) prevalence in hemodialysis patients in Spain: effect of time, initiating HCV prevalence studies and adoption of isolation measures. *Antiviral Res*., 60(2):129-134.

- **Egyptian renal registry2008 report**: ESNT congress, Hurghada Egypt, February 2009.

**- Makhlough A, Jamshidi M, Mahdavi M R(2008):** Hepatitis C prevalence studied by polymerase chain reaction and serological methods in haemodialysis patients in Mazandaran, Iran. Singapore Med; 49(11): 921-930.

**- Natov S, Pereira BJG(2009):** Hepatitis C virus infection in patients on maintenance dialysis. In Uptodate 2009.

**- Rahnavardi M, Moghaddam SMH and Alavian SM(2008):** Hepatitis C in - Hemodialysis Patients: Current Global Magnitude, Natural History, Diagnostic Difficulties and Preventive Measures. Am J Nephrol;2 8:628–640.

**- Wasmuth JC(2009):** Hepatitis C - Epidemiology, transmission and natural history. In: Hepatology 2009. Flying Publisher;37-48.

# ***Patients and methods***

*About all hemodialysis patients on regular hemodialysis (thrice per week) in EL Menofia governorate (sector A)including HD units in:*

1) Shebin EL kome City.
2) Menof City.
3) Sers EL lian City.
4) EL Bagor City.

*were evaluated using questionnaire form addressing the following points:*

1. Age by years.
2. Sex.
3. HCV antibodies at the start of HD.
4. Timing of Seroconversion.
5. Duration of HD by monthes.
6. Previous blood transfusion.
7. Previous surgery.
8. Isolation procedure in the center (place isolation, machine isolation, staff).
9. Infection control measures.
10. Switch of dialysis patient between centers.
11. Vascular access.
12. History of Shistosomiasis.
13. HBs Ag.
14. Family history of hepatitis.
15. Cause of chronic kidney disease.

# المقدمة

إن الالتهاب الكبدي الوبائي (ج) هو مرض واسع الأنتشار,فهناك حوالي ١٧٠ مليون فرد مصاب بهذا الفيروس ما يعادل ٣ ٪ من أجمالي تعداد سكان العالم وذلك طبقا لأحصائيات منظمه الصحه العالميه. ومن الملحوظ أن هناك تفاوت في أنتشار العدوي ,فمثلا مصر من أكثرالدول أنتشارا لهذا المرض بنسبه تصل الي ٢٠٪ وهوأيضا في أفريقيا أكثر أنتشارا منه في شمال أمريكا وأوروبا.

ومن المهم ذكره أنه لا يوجد تحصين ضد هذا المرض كما أنه يسمى بالوباء الصامت حيث ان تشخيصه غالبا يتم في مراحل متأخره,كما أن المريض في المراحل الأولى لا يشعر بأية أعراض مميزه والمشكله الاكبر أن أعراض التهاب الكبد قد تكون في بعض الأحيان غير مفيده في التشخيص لأنها قد تشبه الزكام فقط.

من المعروف أن مرضي الأستصفاء الدموي أكثر عرضه من غيرهم للعدوي و يرجع هذا الي تكرار نقل الدم و مشتقاته وتكرار الحقن وأيضا من خلال مراكز الأستصفاء الدموي بسبب عدم اتباع وسائل مكافحه العدوي بدقه.لهذا فأن سرعه التشخيص الدقيق للفيروس الكبدي سي يتيح الفرصه للعلاج المناسب كما أنه يجعلنا أكثر حرصا في عدم انتشاره للأخرين.

هناك علاقة مؤكده بين الفيروس الكبدي (ج) وأمراض الكلي , فالفيروس الكبدي (ج) يسبب زياده نسبه البروتينات البارده المختلطه بالدم من الناحيه الأخري فان مرضي الأستصفاء الدموي أكثر عرضه من غيرهم للعدوي و ذلك لتعدد و طول فتره الوصله الوعائيه. ان الألتهاب الكبدي الوبائي (ج) أكثر أمراض الكبد انتشارا بين مرضي الأستصفاء الدموي وهو يمثل مصدر رئيسي للأعاقه و الوفاه.

من الصعب تحديد التاريخ المرضي لمريض الألتهاب الكبدي الوبائي (ج) من حيث تحديد السبب وبدايه العدوي حيث ان أعراض المرض تحتاج الي سنوات حتي تظهر وقد يتوفي المريض من أسباب مرضيه أخري.

وأخيرا لابد لكل طبيب أمراض كلي من فهم الفيروس الكبدي (ج) ومدي إنتشاره ومضاعفاته سواء الكبديه أو خارج الكبد , سبل التعامل معها وسنحاول تغطيه بعض مظاهر هذه المسأله في هذه الرسالة.

# معدل إنتشار الفيروس الكبدي (ج) بين مرضى الأستصفاء الدموي فى محافظه المنوفيه قطاع(أ)

مقدمة رسالة توطئة

للحصول على درجة الماجيستير في أمراض الكلى

مقدمة من الطبيبة


**هدى محمد بكرى حمودة**

بكالوريوس الطب والجراحة


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٢٠١٠

# List of Contents

# List of Figures

# List of Tables