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Protein Profile of Helicobacter Pylori Isolates from Sudanese Patients with Gastroenterological Inflammation

By

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Dedication

I dedicate this work

To my father

My mother

My family
ACKNOWLEDGMENT

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Abstract

As chronic gastritis and peptic ulcer diseases, particularly duodenal ulcer, are the most common endoscopic findings in Sudanese dyspeptic patients, it was necessary to study the association between H. pylori infection and gastro-duodenal diseases in developing countries such as Sudan.

Material and Methods: One hundred and twenty subjects referred to Gastroenterology Department, Ibn Sina Hospital, Khartoum were studied. Most of the patients were referred because of dyspepsia. After endoscopic examination 97 were found to have definite pathology and 23 were found to have normal endoscopic examination. Age range from 18 to 80 years old. Male to female sex ratio was (2:1). Endoscopic biopsies were collected from all subjects. In this study, culture of H. pylori was used as the gold standard method to which histological (urease) test, was compared as alternative diagnostic technique.

Results: 93 subject were H. pylori positive when using culture. The CLO test detected 85 H. pylori positive and 35 were negative.

H. pylori was found not to be associated (p>0.05) with age, sex, cigarette smoking urease test, socio-economic status, residence, Tribe and water resources disposable system.

However, it is associated (p< 0.05) with complaints (epigastric pain, abdominal pain and vomiting), endoscopy finding (gastric ulcer, duodenal ulcer, gastritis and duodenitis) and the presence of 120 kda.

The protein pattern of H. pylori when analyzed with sodium deodecylsulphate polyacrylamide gel electrophoresis (SDS-PAGE) technique are not markedly different between strains of different origin SDS-PAGE The major protein bands with molecular weights of 120, 94, 88,75, 69, 67, 61, 48, 45, 42, 30,and 25Kda were variably present.
The data from this study proves the high correlation of 120 Kda protein to endoscopic findings \(x^2 = 16.047\) p value = 0.003 p < 0.05 highly significant. In this study 57 (61%) out 93 H. pylori strains that were isolated from 120 subjects possess the gene that expressed its 120 Kda product. The 120Kda was detected in H. pylori isolated from one subject with normal endoscopy, 11 (11.8%) with duodenal ulcer, 8 (8.6) patient with gastric ulcer, 23 (23.7%) patient with gastritis, 14 (15.1%) patients with duodenitis and only 1 patient with oesophagitis. The present study confirms a high prevalence of H. pylori infection in Sudanese patients as in most population in Africa and other developing countries.
مستخلص البحث

اجري البحث عن وجود الجرثومه الحلزونية (Helicobacter pylori)

بين مجموعه من المرضى السودانيين الذين يعانون من الالتهاب المعدى والالتهاب الثاني عشر فرحه المعدة وفرحه الاثنين عشر حيث تم اختبار الاشخاص الذين اجربتهم الدراسة بوحدة المناظر بمستشفى ابن سينا التخصصي. الخزوم السودان وشملت 120 شخصاً. أثبت الدراسة وجود علاقة بين الإصابه بالجرثومه الحلزونية (هـ. بيلوري) في المرضى الذين يعانون من الالتهابات المعدية وتكوين الفرحه في المعدة والإثني عشر.

في هذه الدراسة تم استخدام زراعة جرثومه (هـ. بيلوري) كالطريق المثلى كمعيار ذهبي. واستخدمنا طريقه أخرى للتتتشخيص باستعمال اختبار إنزيم البورازالذي يعني نتيجة سريعة للكشف عند وجود الجرثومه في خلال دقائق.

ولكنه ليس ذا حساسية عاليه كما تم الكشف باستعمال الفصل الجيلاتين الكهربائي.

Sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS_PAGE)

بعد صبغه بلون الكوماسى الأزرق على وجود الاشرطة البروتينيه الرئيسيه ذات الاوزان الرئيسيه داميه الوجود كالتالي 120 و94 و88 و85 و75 و69 و67 و61 و60 و61 و45 و40 و30 و25. ونتيجه الفصل البروتين 57(61%) للمستضاد 20% كي دى وهو البروتين ذا الوزن الجزيئي العالي من حزمة 93 العدد الكلى للعينات الإجابه للجرثومه. اللى ذي عزالة من 13(66%) لمرضى فرحة الاثنين عشر و18 (67%) لمرضى فرحه المعدية و34(61%) لمرضى الالتهابات المعدية و23(63%) لمرضى التهابات الاثنين عشر و23 مريضي NUD اثبت الدراسة عدم وجود علاقة بين العمر و الجنس وتدخين السجائر ووجود جرثومه (هـ. بيلوري). بينما كانت هنالك علاقة بين تعاطى الكحول والمهنة والإعراض المرضيه وفرحه وجرثومه الحلزونية.
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