Prevalence of *Helicobacter pylori* infection and endoscopic findings in patients with dyspepsia at Moi Teaching and Referral Hospital

Dr Sang Thomas Mwogi
Moi University School of Medicine
Introduction

• What is *H. pylori*?
  – Gram negative microaerophilic bacterium
  – Causes inflammation of the stomach
  – First isolated by Barry Marshall and Robin Warren in 1982
Introduction

- *H. pylori* is a highly prevalent infection
  - Developing countries, Poor socio-economic
  - Acquired in childhood

- Etiologic agent of majority of upper GI disease\(^1\)

- Associated with significant morbidity

Global Prevalence

• USA Texas 34% whites; 70% blacks\(^2\) (UBT)

• Switzerland: 7.3%-natives but 30%-
immigrants\(^3\) (Seroprevalence)

• Japan – 30\(^%\)\(^2\) (Seroprevalence)

• Brazil – 85% rural 64% urban\(^2\) (UBT)

Regional Prevalence

• South Africa 2010 – 66.1%\(^4\) (RUT)

• Cairo 60%, Alexandria 88%\(^5\) (Seroprevalence)

• Nigeria 2010 – 64%\(^6\) (RUT)

• Uganda 2008 – Seroprevalence study 87%

H. Pylori in Kenya

- Lule 1991 KNH – 70% in 66 patients
- Ogutu 1993 KNH – 80.5% to 100% in 120 patients
- Shmuely 2003 Nakuru – 71% in 138 patients
- Kimang'a 2010 Aga Khan – 54.8%

Objectives

• To determine the prevalence of *H. pylori* infection among patients with dyspepsia referred for upper gastrointestinal endoscopy at MTRH

• To describe the endoscopic findings among patients with dyspepsia
Methodology

• **Study Design**
  – This was a cross sectional study

• **Study Population**
  – Patients who had dyspepsia and had been referred for endoscopy at MTRH
Inclusion Criteria

1. Patients certifying Rome III criteria for dyspepsia.
2. Informed written consent from patient or immediate relative or guardian.
3. Patients age is 18 years and above
Rome III criteria for dyspepsia

• One or more of the following symptoms
  1. Postprandial fullness (termed postprandial distress syndrome)
  2. Early satiation (meaning inability to finish a normal sized meal or postprandial fullness)
  3. Epigastric pain or burning epigastric pain (termed epigastric pain syndrome)

Exclusion Criteria

• Unable to pass endoscope to the stomach.

• Use of any of the following drugs for at least two weeks prior to endoscopic examination:
  – Proton pump inhibitors, H2 receptor blockers, bismuth salts, antibiotics or antifungal drugs
Study Procedure

Arrival at endoscopy theatre

Assess Compliance

Informed consent for endoscopy and for study

Questionnaire and assessment of inclusion criteria

Endoscopy done and gross findings noted

Biopsies taken for rapid urease test
Rapid urease test procedure

Mucosal biopsies from antrum and corpus

Placed in 2 wells containing buffer

Color change noted at 30 mins

If negative noted at 1hr, 3hr and 24hr

Findings recorded and patients counseled appropriately
Justification for using Rapid Urease Test

• American College of Gastroenterology 2007\textsuperscript{11}
  – Recommended it as Gold-standard at endoscopy
  – Routine histology is generally not necessary and is expensive
  – Routine culture for H. pylori is not recommended unless – resistance testing

• Both sensitive and specific\textsuperscript{11}
  – 98% and 100% respectively

\textsuperscript{11} Chey WD, Wong BC. \textit{American College of Gastroenterology guideline on the management of Helicobacter pylori infection}. \textit{Am J Gastroenterol}. 2007;102(8):1808-1825.
Results

165 Patients screened

- Patients with age less than 18
  - Rome criteria not satisfied
    - Patients on drugs for 2 weeks
      - Unable to pass probe to stomach
        - 126

- 4
- 11
- 10
- 14
RESULTS

• Demographics
  
  – 65 (52%) were males and 61 (48%) were female
  
  – Majority of patients 78 (61.9%) were between 25 and 54 years
  
  – The median age was 46 years. The mean age ± SD was 47.7±18.8
H. Pylori with age

Age in years

Number of Patients

H. pylori +

H. pylori -
Endoscopic findings and *H. pylori*

![Bar chart showing endoscopic findings and H. pylori status](chart.png)
## Endoscopic findings and *H. pylori*

<table>
<thead>
<tr>
<th>Condition</th>
<th>H. pylori +ve</th>
<th>H. pylori -ve</th>
<th>p-value (Chi Square)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute gastritis</td>
<td>22</td>
<td>24</td>
<td>0.768</td>
</tr>
<tr>
<td>Chronic gastritis</td>
<td>23</td>
<td>19</td>
<td>0.537</td>
</tr>
<tr>
<td>Stomach tumors</td>
<td>6</td>
<td>4</td>
<td>0.527</td>
</tr>
<tr>
<td><strong>Duodenitis</strong></td>
<td>23</td>
<td>19</td>
<td>0.537</td>
</tr>
<tr>
<td>Duodenal ulcers</td>
<td>20</td>
<td>8</td>
<td>0.023</td>
</tr>
<tr>
<td>Gastric ulcers</td>
<td>8</td>
<td>2</td>
<td>0.058</td>
</tr>
<tr>
<td>Esophagitis</td>
<td>0</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Esophageal masses</td>
<td>3</td>
<td>3</td>
<td>1.000</td>
</tr>
<tr>
<td>Other gastric lesions</td>
<td>8</td>
<td>2</td>
<td>0.058</td>
</tr>
<tr>
<td>Normal findings</td>
<td>1</td>
<td>4</td>
<td>0.180</td>
</tr>
</tbody>
</table>
Discussion

• *H. pylori* prevalence 52.3%
  – Kimang'a (2010) in Aga Khan 54.8% in 540
  – Lule (1991) KNH – 70% in 66 patients
  – Ogutu (1993) KNH – 81.7% in 120 patients

• *Age*>55  *Prevalence* 71.9% vs 47.7% in <55 yrs
  – Lule (1991) – Peaked at 51 to 60 years

Discussion

• Peptic ulcer disease – *H. pylori* prev. 73.7%
  – Marshall (1985) – Significant association\textsuperscript{12}
  – Wafula (2002) KNH – p-value: 0.021\textsuperscript{11}
  – Ogutu (1993) KNH – 100% prevalence\textsuperscript{10}
    • DU vs Normal endoscopic findings – p-value: 0.01
  – 80% of GU had *H. pylori* (p=0.058) / Ogutu (p=0.1)

Discussion

• *H. pylori* and gastric tumors
  – No association (p-value 0.527)
  – Ogutu (1993) KNH – No association. 75% -ve\(^{10}\)
  – Kimang’a (2010) - <1%
  – Postulated reason
    • Necrotic tissue
    • Time to development of cancer

Discussion

• Endoscopic findings
  – Abnormal findings (96%) Normal (4%)
  
  – Kimang'a (2010) – 100% abnormal findings
  
  – Ogutu (1993) KNH – 36% normal

Discussion

- **Endoscopic findings**
  - Gastritis single most common finding - 69.8%
  - Duodenitis 2\textsuperscript{nd} most common finding
    - Kimang'a (2010) - 60.9% - gastritis\textsuperscript{7}
    - Wafula (2002) – 67.6% gastritis among diabetics\textsuperscript{8}
  - Peptic ulcer disease 30.1%
    - Ogutu (1993) 40% \textsuperscript{10}


Conclusion

• Prevalence of *H. pylori* among dyspeptic patients seems to have reduced

• Gastritis the most common endoscopic finding

• Peptic ulcer disease associated with *H. pylori*

• Older population more likely to have *H. pylori*
Recommendations

• Peptic ulcer disease – treat for *H. pylori* in resource poor settings,

• Dyspepsia is not a reason for treating *H. pylori*

• Study to investigate other associations of dyspepsia
Limitations

• User dependent nature of endoscopy
• Highly selective cohort of patients
• Patients who did not turn up
• Inability to pass probe to the stomach
• Time to endoscopy
Acknowledgements

• Prof. P. Ayuo and Dr. F. Some

• Lecturers and fellow registrars in the department of medicine, Moi University

• Staff at endoscopy theatre MTRH
Thank you