Inadequate Hepatitis B Vaccination Among Surgeons Practicing in Ethiopia:

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Introduction

• By the nature of the profession, surgeons are exposed to blood and body fluids that have the potential to transmit disease.

• The risk of acquiring a virus from one percutaneous needle stick is 0.3% to 0.4% for HIV, 6% to 30% for HBV, and 2.7% to 10% for HCV.
Introduction

- 500–600 healthcare workers whose job entails exposure to blood products are hospitalized annually, with over 200 going on to develop chronic hepatitis.

<table>
<thead>
<tr>
<th>Percent of Acute Hepatitis B Cases Developing Chronic Hepatitis B $^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants</td>
</tr>
<tr>
<td>Children</td>
</tr>
<tr>
<td>Adults</td>
</tr>
</tbody>
</table>
Hepatitis B  Global Impact

• It’s a common disease!
• Over 350 million people in the world have chronic hepatitis B

In Ethiopia.....

• There is scarce data regarding this in Ethiopia.

• This study attempts to determine
  – the Hepatitis B vaccination status among surgeons practicing in Ethiopia,
  – their perceptions of the risks of HBV infection and its prevention through vaccination,
  – the perceived barriers to adequate hepatitis vaccination in the country
Materials and methods

• This is a cross-sectional, descriptive study

• An online questionnaire designed using the online free software Qualtrics survey software (qualtrics.com)

• Emailed to 131 participants working at 28 hospitals throughout Ethiopia, 98 responded.
## Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency (N=98)</th>
<th>Percentage (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-34</td>
<td>42</td>
<td>42.8</td>
</tr>
<tr>
<td>35-44</td>
<td>24</td>
<td>24.4</td>
</tr>
<tr>
<td>45-54</td>
<td>20</td>
<td>20.4</td>
</tr>
<tr>
<td>55-65</td>
<td>12</td>
<td>12.2</td>
</tr>
<tr>
<td><strong>Years of Practice in Surgery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 years</td>
<td>20</td>
<td>20.4</td>
</tr>
<tr>
<td>6-10 years</td>
<td>28</td>
<td>28.5</td>
</tr>
<tr>
<td>&gt;10 years</td>
<td>50</td>
<td>51.0</td>
</tr>
</tbody>
</table>
# Results

<table>
<thead>
<tr>
<th>Field of Specialty</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General Surgery</td>
<td>39</td>
<td>39.7</td>
</tr>
<tr>
<td>Orthopedic surgery</td>
<td>9</td>
<td>9.1</td>
</tr>
<tr>
<td>Urology Surgery</td>
<td>6</td>
<td>6.2</td>
</tr>
<tr>
<td>Thoracic Surgery</td>
<td>6</td>
<td>6.2</td>
</tr>
<tr>
<td>Pediatric Surgery</td>
<td>6</td>
<td>6.2</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Plastic and reconstructive surgery</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Residents (Under training)</td>
<td>25</td>
<td>25.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Practice type</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Private/NGO hospital</td>
<td>12</td>
<td>12.2</td>
</tr>
<tr>
<td>Government non teaching hospital</td>
<td>28</td>
<td>28.5</td>
</tr>
<tr>
<td>University teaching hospital</td>
<td>58</td>
<td>59.1</td>
</tr>
</tbody>
</table>
Results
Results: Vaccination

• Only 24(23.4%) have received Hepatitis B Vaccination,
  – Only 18/24 received the three doses.
  – 8(10.8%) are already Hepatitis B positive.

• Vaccination status was not statistically associated to age, sex, institution of practice, duration of practice and field of specialty (P>0.96).
Results: Benefits of the vaccine

- Six (8.1%) claimed the vaccination has no benefit for the surgeon

- 92 (93.8%) strongly believed that surgeons should, as a rule, receive the vaccination as it has proven benefits
Results: Barriers

• The commonest sited reason for not being vaccinated were:

  – “I didn’t give it much thought: 36 (48.6%),

  – “the vaccination is not available/I don’t know if it’s available in Ethiopia”: 14 (18.9%),

  – “it is expensive”: 10 (13.5%)

  – “it is time consuming: 10 (13.5%)
Results: Accidents

• Seventy-six (77.5%) reported a sharp cut or needle sticks while operating in the past 6 months.

• 13 (13.25%) had received anti-retroviral prophylaxis at one time during their practice.
Results: Double gloving

• 68(70.3%) wear double gloves in more than 75% of their procedures, 4(4.1%) said never.

• Those who wear in < 25% are more likely to sustain needle sticks and this was found to be statistically significant (P=0.04).

• However, operative injuries and vaccination status were not statistically related (P=0.92)
Discussion

• As compared to
  – 97% in London,
  – 94-98% in USA,
  – 47% in Pakistan,
  – 40% in Nigeria,
  – 39% in the sub-Saharan region,

  – our vaccination rate of **23.4%** is terribly low.
Discussion

• In Ethiopia,
  – out of pocket coverage is the only means
  – No insurance
  – No mandatory testing and vaccinations

• Few claimed vaccination has no proven benefit to protect oneself against the infection,

• 93.8% believe it’s a very important vaccine
Discussion

• Reported rates of work related accidents is 76 (77.5%).

• 13 (13.25%) had received anti-retroviral prophylaxis at one time during their practice.

• No change from two studies within the past 7 years.

• Hepatitis B is more infectious and deadly than HIV .............most surgeons are not vaccinated.............

? ARE WE PLAYING WITH FIRE?
Discussion

• More than 68% of the surgeons double glove in more than 75% of their procedures.

• Those who wear double gloves in less than 25% of their procedures are more likely to sustain needle sticks (P=0.04).

• However, operative injuries and vaccination status were not statistically related (P=0.92).
Conclusion

• This study has found out:
  
  – rate of hepatitis B vaccination was terrifyingly low among Ethiopian Surgeons.
  
  – Compounded by the fact that 8(10.8%) of them are already hepatitis positive, there is a very clear call for intervention as soon as possible
Recommendation

• Clearly calls for an intervention:
  – Policy
  – Vaccine provision
  – Mandatory testing of patients and surgeons
  – Care for Hepatitis +ve surgeons
  – More studies
Thank you