Simple intervention to improve detection of hepatitis B and hepatitis C in general practice

Zaynab al-Lami
(GP-Birmingham)
Co-authors: Sarah Powell, Sally Bradshaw, Amanda Lambert, David Mutimer and Andrew Rouse

Presentation Outline

- Introduction – Hepatitis B/C as a public health problem
- Aims and Methods
- Results
- Conclusions
- Final thoughts
Introduction – The Problem of Hepatitis B and C infection

- Chronic hepatitis B and C infection remains an important public health problem – it is thought to affect approximately half a million people in the UK.

- The highest prevalence rates are found in non-UK born individuals.

- It remains asymptomatic in the vast majority – putting them at risk of infecting others.

- Such individuals are at high risk of developing cirrhosis and hepatocellular carcinoma.


- Approximately 50% of cases with chronic hepatitis C infection will progress to cirrhosis & hepatocellular carcinoma.

- 15-25% of cases with chronic hepatitis B will die prematurely of cirrhosis or hepatocellular carcinoma.

- Worldwide approximately 80% of all cases of hepatocellular carcinoma are due to chronic hepatitis B infection.
Aims

- To use a simple protocol to improve detection of hepatitis B and hepatitis C in general practice

- The protocol would allow non-UK born individuals to be opportunistically screened for asymptomatic hepatitis B and C infection

- Identification of such individuals would then allow referral to a specialist for review to decide whether treatment was needed or not

Methods

- Practices within the Heart of Birmingham PCT with a sizeable ‘non-UK born’ population were approached regarding offering opportunistic hepatitis B/C testing to patients

- Six were identified and agreed to participate

- Eligibility criteria for patient screening included all of the following:
  - Attending GP surgery for a blood test for a non-liver related condition
  - Born outside the UK
  - Unknown hepatitis B/C status

- Between April 2009 and July 2010, practice staff identified patients using those criteria as part of new patient registration, scheduled phlebotomy clinics and at routine GP consultations – 1012 patients consented to screening
Methods

- Positive cases were identified by the relevant screening marker:
  - Hepatitis B – presence of Hepatitis B surface antigen (HBsAg)
  - Hepatitis C – presence of Hepatitis C antibody (anti-HCV)

- Development of an electronic (EMIS) based data recording template was key in facilitating data collection

Results

- 14 of 1006 samples (1.4%) tested positive for hepatitis B surface antigen

- 24 of 1012 (2.4%) tested positive for hepatitis C antibody

- 38 positive cases were identified in total

- Results are shown by Table 1
### Table showing Hepatitis B/C prevalence by ethnicity

<table>
<thead>
<tr>
<th>Country/Ethnicity</th>
<th>Prevalence of Hep B</th>
<th>Prevalence of Hep C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladeshi</td>
<td>1/52 (1.9%)</td>
<td>2/49 (4.1%)</td>
</tr>
<tr>
<td>Middle East</td>
<td>2/93 (2.2%)</td>
<td>4/95 (4.2%)</td>
</tr>
<tr>
<td>Pakistani</td>
<td>2/263 (0.76%)</td>
<td>8/262 (3.1%)</td>
</tr>
<tr>
<td>African</td>
<td>3/131 (2.3%)</td>
<td>1/142 (0.7%)</td>
</tr>
<tr>
<td>Indian</td>
<td>2/191 (1.0%)</td>
<td>0/180 (0%)</td>
</tr>
<tr>
<td>Caribbean</td>
<td>1/90 (1.1%)</td>
<td>0/89 (0%)</td>
</tr>
<tr>
<td>All other</td>
<td>3/185 (1.6%)</td>
<td>9/195 (4.6%)</td>
</tr>
<tr>
<td><strong>All groups</strong></td>
<td>14/1006 (1.4%)</td>
<td>24/1012 (2.4%)</td>
</tr>
</tbody>
</table>

### Case Study

- A 56 year old lady of Bangladeshi origin attended her GP surgery. Her hepatitis B and C status was unknown.

- The GP ordered blood tests for another reason; the lady was offered hepatitis B and C screening as per protocol.

- Blood tests revealed that she was hepatitis C positive and she was referred to the QEH Liver Unit for a review.
Case Study

- Further investigations showed that she had cirrhosis and scans revealed a 3cm lesion in her liver representing early stage hepatocellular carcinoma.

- The appropriate treatment was liver transplantation and this was undertaken successfully four months after the index GP attendance.

- The patient remained well one year later - it is likely that opportunistic screening saved this lady’s life.

- Transplantation is only successful when the tumour is less than 5 cm in diameter and there is no curative treatment for larger tumours.

Results – Outcomes of Patients with a positive status

- 37 of the 38 positive cases were referred to a specialist.

- 35 of these were reviewed in secondary care.

- 11 of the 35 cases had definitive treatment (10 had antiviral therapy, 1 had a liver transplant).
Results – Outcomes of Patients with a positive status

- Of those that did not have treatment:
  - treatment was not necessary for 10 patients
  - 2 patients declined treatment
  - 2 patients had medical illnesses where antiviral treatment was contraindicated
  - 10 patients were having investigations prior to starting any treatment

Flow chart of positive cases
Conclusions

- 38 people were identified that merited specialist investigation; and of those seen in clinic only one did not attend because of health problems demonstrating that the protocol was highly acceptable to patients – 97% attendance rate at specialist clinic

- Contact tracing can be implemented on identification of positive cases to identify any secondary cases and close contacts can be vaccinated against hepatitis B if not infected – this clearly has much public health benefit

Conclusions

- Our findings support existing evidence that hep B/C prevalence in non-UK born individuals is 4-6 times higher than those born in the UK – prevalence varies between ethnic groups

- We have shown that a simple, inexpensive, opportunistic screening protocol appears effective, acceptable to patients and will have added public health benefit

- Therefore, it is likely that about 4% of people (NNT = 1:25) would directly benefit from testing
Final thoughts

- This opportunistic screening protocol demonstrates a good example of how to find positive cases within acceptable resources.

- It simply requires health care professionals to identify patients born outside the U.K. then offering them a blood test for hepatitis.

- Identifying patients can be achieved in various ways such as: during new patient registration clinics, routine phlebotomy clinics and GP/nurse lead clinics.

- Per-patient tests for hep B/C testing were £4.24 for a hep B surface antigen screen, £15.69 for a hep B surface antigen confirmatory blood test and £6.73 for a hep C antibody screen.

- We believe that this simple protocol could and should be implemented in many other practices.