Mandatory Screening of Surgical Patients for Blood-borne Infections vs Standard Precautions at Polish Hospitals: What is the evidence?
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HBV, HCV and HIV represent significant occupational hazard to the surgeon
It is a common practice at Polish hospitals to force patients undergoing elective surgery to be:

- tested for HIV
- immunised for HBV - before which testing for HBsAg is also recommended
Prevalence of HBV, HCV, HIV in a general population of Poland

- HBV: 1.5-2%
- HCV: 1.5%
- HIV: 0.1%
1996-2004, Poland:

- 55% of total hepatitis B cases
- 90% of hepatitis B cases in patients aged 60 years or more

nosocomially acquired
Goal

To assess the appropriateness of these policies:

• whom do they really serve?
• do we need to test for HCV?
Objective

To measure

- immunization coverage for HBV
- prevalence of blood-borne pathogens among surgical patients in an urban, teaching hospital
Study design

prevalence study:
data were collected sequentially from all patients admitted to each of 4 surgical wards
Methods...
Public Teaching Hospital, Szczecin: largest public referral hospital in Western Pomerania

4 surgical units:
- Orthopedics
- Neurosurgery
- General/Liver Surgery
- General/Hand Surgery

30-37 beds each; 1500-1700 admissions per year
Study population...

November 2006 - December 2007: a census of 100 adult admissions was taken consecutively from each of 4 surgical departments.
A trained nurse completed an anonymous questionnaire in 5 sections:

- demographic data of patient
- type of ward, procedure (elective or emergency)
- risk factors for HBV, HCV, HIV infection
- HBV immunisation status
- history of confirmed hepatitis B or C
After written consent participants were offered:

- HBsAg
- anti-HCV
- anti-HIV testing

(All tests by enzyme-linked immunosorbent assay)
In order to ensure anonymity of sampling, each patient received an identification code.
Patients had opportunity to get info about results by phone contact with study centre.
Protocol of the study was approved by university bioethical committee.
Categorical data were analysed using chi-square, continuous data by Mann-Whitney test. (p<0.05 considered statistically significant)
Results...
Response rate: 100%
### General characteristics of study population of surgical patients

<table>
<thead>
<tr>
<th>Category</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>205</td>
<td>(51%)</td>
</tr>
<tr>
<td>female</td>
<td>195</td>
<td>(49%)</td>
</tr>
<tr>
<td><strong>Median age</strong></td>
<td>51</td>
<td>(19-93)</td>
</tr>
<tr>
<td><strong>Place of residence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Szczecin</td>
<td>203</td>
<td>(51%)</td>
</tr>
<tr>
<td>towns &lt;200 000</td>
<td>138</td>
<td>(35%)</td>
</tr>
<tr>
<td>rural areas</td>
<td>55</td>
<td>(14%)</td>
</tr>
<tr>
<td>foreigners</td>
<td>4</td>
<td>(1%)</td>
</tr>
<tr>
<td>Type of surgery</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>elective</td>
<td>307</td>
<td>(77%)</td>
</tr>
<tr>
<td>emergency</td>
<td>91</td>
<td>(23%)</td>
</tr>
</tbody>
</table>
Fig. 1. Immunization coverage among surgical patients in Szczecin, Poland 2006-2007 (n=400)

- Immunized: 62%
  - 2 doses: 32%
  - 3 doses: 21%
  - Not immunized: 6%
- Did not remember: 6%
Fig. 2. HBV immunization coverage among surgical patients & the type of surgery
Szczecin, Poland 2006-2007 (n=400)

- Elective: 68%
- Emergency: 41%

p < 0.0001
# Prevalence of HBsAg/anti-HCV/anti-HIV among surgical patients
## Szczecin, Poland, 2006-2007 (n=400)

<table>
<thead>
<tr>
<th>Serological test</th>
<th>Number of patients</th>
<th>%</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBsAg or anti-HCV</td>
<td>9</td>
<td>2.25</td>
<td>1.2 - 4.2</td>
</tr>
<tr>
<td>HBsAg</td>
<td>3</td>
<td>0.75</td>
<td>0.3 - 2.2</td>
</tr>
<tr>
<td>Anti-HCV</td>
<td>6</td>
<td>1.5</td>
<td>0.7 - 3.2</td>
</tr>
<tr>
<td>Anti-HIV</td>
<td>0</td>
<td>0</td>
<td>0 - 0.95</td>
</tr>
</tbody>
</table>
All seropositive patients were undergoing elective surgery, none emergency
Fig. 4. General characteristic of surgical patients infected with blood-borne pathogens

n=400, Szczecin, Poland; 2006-2007

HCV+

HBsAg+

HIV

HCV+

HBsAg+
Fig.4. General characteristic of surgical patients infected with blood-borne pathogens

n=400, Szczecin, Poland; 2006-2007
Fig. 4. General characteristic of surgical patients infected with blood-borne pathogens

n=400, Szczecin, Poland; 2006-2007
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n=400, Szczecin, Poland; 2006-2007
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n=400, Szczecin, Poland; 2006-2007

HCV+

HBsAg+
Fig. 4. General characteristic of surgical patients infected with blood-borne pathogens

n=400, Szczecin, Poland; 2006-2007

HCV+

HBsAg+
Fig. 4. General characteristic of surgical patients infected with blood-borne pathogens

n=400, Szczecin, Poland; 2006-2007

HCV+

HBsAg+
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n=400, Szczecin, Poland; 2006-2007

HCV+
HBsAg+
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n=400, Szczecin, Poland; 2006-2007

HCV+
HBsAg+
Fig. 4. General characteristic of surgical patients infected with blood-borne pathogens

n=400, Szczecin, Poland; 2006-2007

HBsAg+
Fig. 4. General characteristic of surgical patients infected with blood-borne pathogens

n=400, Szczecin, Poland; 2006-2007
Conclusions...
This is the first report defining HBV immunization coverage and infection rates with HCV/HBV/HIV among surgical patients admitted to a Polish hospital.
Although there was a high immunization coverage among surgical patients, almost one-third had not been immunized for HBV before admission, remaining a potential pool of HBsAg carriers.
Although there was a low seroprevalence of HBV and HCV infection in our surgical population, anti-HCV prevalence was double that for HBsAg. No HIV positive case was found.
These data strongly question the strategy which is, so far, commonly practised at Polish surgical wards.
Current policies to identify HBV and HIV sero-positive patients admitted for surgery appear of limited value for hospitals and an unnecessary expense for patients.

Standard precautions to protect against all blood-borne infections are recommended.
Act now or pay later...