The changing pattern of transfusion-transmitted infection

Serious Hazards of Transfusion
7th Annual Progress Meeting
6th July 2004
Definition of a transfusion-transmitted infection (1)

- recipient has evidence of infection post-transfusion
- no evidence of infection prior to transfusion
- no evidence of an alternative source of infection
Definition of transfusion-transmitted infection (2)

- at least one component originated from a donor who had evidence of the same infection

OR

- at least one component was contaminated with the agent of infection
Inclusion criteria for reporting

- infection confirmed in recipient by detection of antibody, antigen, RNA/DNA, culture etc (and no evidence of infection pre-transfusion)

OR

- acute clinical hepatitis of unknown cause
What cases are reported?

- recipient has evidence of infection post transfusion
- no evidence of infection pre-transfusion
- acute clinical hepatitis
- no evidence of an alternative source of infection

- USUALLY, BUT NOT ALWAYS
- NOT OFTEN
- VERY RARE
- VIRTUALLY NEVER
Problem

- many cases are reported at time of initial test report, but before confirmation of infection in recipient
- thorough evaluation may not take place
- Blood Services may struggle to obtain relevant information
Solution (!)

- Blood Service investigates the case to avoid any inappropriate "labelling"/ complaint / future litigation
What is different now?

Blood Services have more resources to complete investigations

- archive samples
- availability of genomic testing
- agreed national protocols based on “best practice”
Result

we can be more confident then ever before of the conclusions of our investigations

less incomplete/ inconclusive investigations
proportion of reported cases NOT due to transfusion

- 1996/7  28%
- 1999/0  47%
- 2002   75%
What changes has SHOT seen?

- more reports
- more negative investigations
- more completed investigations
Reports of possible transfusion-transmitted infection in the UK and post-transfusion reactions in England and Wales by year of report, 1995 to 2003 (Scotland from 1998)

Source: NBS/HPA Transfusion Transmitted Infection Surveillance
Cumulative total of reports of transfusion-transmitted infections in UK by year of transfusion, 1995 to 2003 (Scotland from 1998)

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<td><strong>Total</strong></td>
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<td>6(8)</td>
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<td>5(5)</td>
<td>6(7)</td>
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<td>3(3)</td>
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Source: NBS/HPA Transfusion Transmitted Infection Surveillance
Transfusion-transmitted infection 1995-2004 (1)

- **HBV**: av. 1 case per year
- **HIV**: occasional, “sporadic” cases
- **HCV**: transmission has disappeared
- **HTLV**: (lookback)
HBV transmissions

- prior to 1995, cases due to late chronic (tail end) infections (as far as we can tell)
- since 1995, cases due to early acute (window period) infections
HIV transmissions

- rare, sporadic
- latest case detected following seroconversion in donor
- no apparent failure of donor selection or testing
HCV transmissions

• disappeared; no cases since 1977

• DoH ex gratia payment scheme may result in apparent reappearance of cases
Transfusion-transmitted infection 1995-2004 (2)

- occasional cases of malaria and HAV reinforce need for continued vigilance and attention to donor selection, reporting of post-donation illness and traceability of blood components
Transfusion-transmitted infection 1995-2004 (3)

- bacterial contamination remains the most significant concern
- increased number of reports does not reflect an increasing problem
- too early to determine whether diversion will have an impact on number of clinical cases
### Reports of transfusion-transmitted bacterial contaminations in UK by species and component type and age, 1995 to 2003 (Scotland from 1998)

<table>
<thead>
<tr>
<th></th>
<th>Platelets Age (in days) at use</th>
<th>Red cells</th>
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<tr>
<td></td>
<td>1 2 3 4 5 NK All</td>
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<tr>
<td><strong>All species</strong></td>
<td>0 2 3 6 10 4 25 4</td>
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<tr>
<td>Bacillus cereus</td>
<td>3(^a) 1 4</td>
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<tr>
<td>Coagulase negative Staphylococci</td>
<td>1 1</td>
<td>1 (23 days)</td>
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<tr>
<td>Enterobacter aerogenes</td>
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<tr>
<td>Escherichia coli</td>
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<tr>
<td>group B Streptococcus</td>
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<td></td>
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<tr>
<td>Morganella morganii</td>
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<tr>
<td>Serratia liquifaciens</td>
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<tr>
<td>Staphylococcus aureus</td>
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<tr>
<td>Staphylococcus epidermidis</td>
<td>1(^a) 2 6 9</td>
<td>1 (32 days)</td>
</tr>
<tr>
<td>Yersinia entercolitica</td>
<td></td>
<td>1(^a) (33 days)</td>
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</table>

\(^a\) Infection was implicated in the death of a recipient.

**Source:** NBS/HPA Transfusion Transmitted Infection Surveillance
BLOOD PROBE

Inquiry ordered after top cop dies in hospital

A CONTAMINATED Blood probe has been ordered after a top cop policeman died in hospital.

Last night, a spokesman for the Metropolitan Police confirmed that a detective inspector had been killed in hospital.

The police probe was ordered after it was revealed that the inspector had been a patient at Barts Hospital.

The inspector, who had been a detective inspector for 25 years, died at the age of 47.

The inspector had been treated for a chest infection, but his condition deteriorated and he died in hospital.

The police said that the inspector had been treated for a chest infection, but his condition deteriorated and he died in hospital.

The inspector had been treated for a chest infection, but his condition deteriorated and he died in hospital.

Aachen

Man sues over ‘botched’ laser eye op

A man has sues over a ‘botched’ laser eye operation.

The man, who was operated on by a laser eye surgeon, claims that the operation was not carried out properly.

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The number of cases may be small, but the quality of investigation is crucial
Careful surveillance, reporting and investigation aids in decision making and risk assessment
Changes in donor selection, donation testing, and source of donations have all followed from examination of reports.
2003 saw the first report of possible transfusion-transmitted vCJD
“You can’t bite me - I’m British”