The Epidemiological situation of Hepatitis E in Portugal

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<table>
<thead>
<tr>
<th>Country</th>
<th>Prevalence</th>
<th>Sample Size</th>
<th>Reference article</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>7,3%</td>
<td>1280 donors</td>
<td>Buti et al 2006</td>
</tr>
<tr>
<td>France</td>
<td>10,6%</td>
<td>431 acute hepatitis 62 HEV 5 years</td>
<td>Mansuy et al 2004 2009</td>
</tr>
<tr>
<td>Italy</td>
<td>3,3%</td>
<td>651 with acute Hepatitis</td>
<td>Romanò et al. 2010</td>
</tr>
<tr>
<td>Germany</td>
<td>68%</td>
<td>66 HEV infection</td>
<td>Wichmann et al. 2008</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2,7%</td>
<td>694 acute hepatitis</td>
<td>Borgen et al 2008</td>
</tr>
<tr>
<td>Sweden</td>
<td>9,3%</td>
<td>108</td>
<td>Olsen et al 2006</td>
</tr>
<tr>
<td>UK</td>
<td>3,3%</td>
<td>838 acute hepatitis 478</td>
<td>Dalton et al 2008  Ijaz et al 2005</td>
</tr>
<tr>
<td>Denmark</td>
<td>20,6%</td>
<td>461</td>
<td>Christensen et al 2008</td>
</tr>
</tbody>
</table>
The epidemiological situation of Hepatitis E in Portugal
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<thead>
<tr>
<th>Area</th>
<th>Prevalence</th>
<th>Sample Size</th>
<th>Reference</th>
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<tbody>
<tr>
<td>Lisbon</td>
<td>29%</td>
<td>360</td>
<td>Marinho R et al. 1994</td>
</tr>
<tr>
<td>North</td>
<td>2.5%</td>
<td>1430 HD</td>
<td>Queirós L et al. 1997</td>
</tr>
<tr>
<td>Porto</td>
<td>4%</td>
<td>50 HD</td>
<td>Macedo G et al. 1998</td>
</tr>
<tr>
<td></td>
<td>6.8%</td>
<td>103 CLD</td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>2.1%</td>
<td>681 HD</td>
<td>Lecour H et al 1999</td>
</tr>
<tr>
<td>Lisbon</td>
<td>3.3%</td>
<td>152 LD</td>
<td>Folgado Alberto et al. 2007</td>
</tr>
<tr>
<td></td>
<td>3.5%</td>
<td>85 HBD</td>
<td></td>
</tr>
<tr>
<td>Lisbon</td>
<td>3.2%</td>
<td>95 GE</td>
<td>Folgado Alberto et al. 2011</td>
</tr>
</tbody>
</table>
The epidemiological situation of Hepatitis E in Portugal

Lisbon, 1994

- 50 Medical students – 4% (2)
- 138 Health workers – 19.5% (19)
- 72 HCV patients – 48% (35)
- 13 Pediatric patients – 0% (0)
- 39 Drug users – 87% (34)

- 17 Timor inhabitants – 53% (9)
- 31 Cape Vert inhabitants – 16% (5)

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360 patients – 104 (29%) but ...

Enzymatic immunoassay
Positive if > 10 % of the cut-off value

Marinho R et al
The epidemiological situation of Hepatitis E in Portugal

North of Portugal, 1997

- 1473 Volunteer healthy donors
- North of Portugal
  - Braga, Bragança, Porto, Viana do Castelo and Vila Real
- Mean age – 37.19 y
- 5% had traveled to endemic areas
- 0.5% had had blood transfusion
- 6.4% were AgHbs+
- 0% HVC+

- Enzymatic immunoassay
- Positive results were confirmed by western Blot

Queirós L et al
The epidemiological situation of Hepatitis E in Portugal North of Portugal, 1997

- HEV prevalence (IgG) – \textbf{2.5\% (64)}
- No statistically significant association has been found between HEV prevalence and:
  - age
  - gender
  - area of \textit{residence}
  - presence of \textit{AgHbs+}

Queirós L et al. 1997
The epidemiological situation of Hepatitis E in Portugal

Porto, 1998

6 (5.8%)
No risk factor
2 hcv
2 hbv
2 alcohol

103 CLD
7 anti-HEV
6.8%

1 HCV+, Venezuela

50 HBD
2 anti-HEV
4%

No risk factor
4%

5.2%

Enzymatic immunoassay
Positive results were retested for regular cut-off values

Macedo G et al. 1998
The epidemiological situation of Hepatitis E in Portugal

North of Portugal, 1999

- 681 Volunteer healthy donors
- North of Portugal
  - Braga, Bragança, Porto, Viana do Castelo and Vila Real
- Mean age – 20.3
- 0 had traveled to endemic areas
- ? had had blood transfusion
- ? HCV or HBV

- Enzimatic imunoessay, Abbott
- Positive if twice the cutoff value

Lecour H et al
The epidemiological situation of Hepatitis E in Portugal

Lisbon, 2007

<table>
<thead>
<tr>
<th>Group</th>
<th>Patients</th>
<th>Anti-HEV</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE</td>
<td>152</td>
<td>7</td>
<td>4.6%</td>
</tr>
<tr>
<td>No risk factor</td>
<td>5 (3.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HBD</td>
<td>85</td>
<td>3</td>
<td>3.5%</td>
</tr>
<tr>
<td>No risk factor</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enzymatic immunoassay
Positive results were retested for regular cut-off values > 1.1

Folgado Alberto et al.
The epidemiological situation of Hepatitis E in Portugal

Lisbon, 2010

3 (3.2%)
No risk factor

GE GROUP
95 patients
4 anti-HEV
4.1%

1 Endemic country

Enzymatic immunoassay
Positive results were retested for regular cut-off values > 1.1

Folgado Alberto et al.
## Diagnosis of HEV at discharge

<table>
<thead>
<tr>
<th>Year</th>
<th>HEV</th>
<th>With coma</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1998</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>1999</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>2</td>
</tr>
</tbody>
</table>

25 acute HEV+ Unknown risk factors 2 coma

44 y
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## Acute HEV cases

<table>
<thead>
<tr>
<th>Area</th>
<th>Hospital</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lisbon</td>
<td>IPO</td>
<td>Man, 50y, HBV+, Paris,</td>
</tr>
<tr>
<td>Lisbon</td>
<td>H. Santa Maria</td>
<td>Man, 20y, Spain</td>
</tr>
<tr>
<td>Algarve</td>
<td>H. Barlavento</td>
<td>Woman, 27y, HIV+, no trips</td>
</tr>
</tbody>
</table>
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- We don't test for HEV
- Difficult access to serological test
- It’s not declared
The epidemiological situation of Hepatitis E in Portugal

- 1994-2010
- Including HCV, HBV
- Total sample 3027
- No travels 2691
- Total HEV+ 233 (7.7%)
- 101 HEV (3.8%)
Reproduced with permission from “Hepatitis E from A to Z”, Robert Purcell MD
Genotypes

Human HEV
Geographic Distribution of Genotypes
Genotype: 1 2 3 4

Reproduced with permission from “Hepatitis E from A to Z”, Robert Purcell MD
There is evidence of Hepatitis E in Portugal

HEV might be underdiagnosed because of lack of serological testing
Thank you!

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