Regional differences in hepatitis testing, vaccination and treatment in the EuroSIDA study

Jeffrey V Lazarus, Lars Peters, Kamilla Grønborg Laut, Jens D Lundgren, Ole Kirk, Amanda Mocroft for EuroSIDA in EuroCoord
EuroSIDA (1994-present) is a prospective observational cohort study of 18,791 patients followed in 107 clinics in 35 European countries plus Israel and Argentina.

Patients are followed every 6 months and a wide range of clinical and laboratory data are collected.

For details see: http://www.chip.dk/Ongoing-Studies/EuroSIDA/About
Background

- Hepatitis screening is a crucial step to timely care

- We explored regional variability in self-reported hepatitis B and C management (vaccination, screening and treatment) and linked it to liver fibrosis across Europe
Methods

- A 74-item survey ([www.chip.dk/eurosida/csruney](www.chip.dk/eurosida/csruney)) was conducted in 2014 in active EuroSIDA clinics.

- Separate HBV and HCV scores were developed based on screening, vaccination and treatment and linked to the EuroSIDA clinical database to determine the odds of HBV or HCV score of 3 and of liver fibrosis (≥F2)
Methods: HBV and HCV Scoring

The score from the clinic survey was derived as follows:

<table>
<thead>
<tr>
<th></th>
<th>HBV</th>
<th>HCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add 1 if</td>
<td>Add 1 if routinely screened for HBV (yes or sometimes)</td>
<td>Add 1 if routinely screened for HCV (yes or sometimes)</td>
</tr>
<tr>
<td>routinely</td>
<td></td>
<td></td>
</tr>
<tr>
<td>screened for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HBV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add 1 if</td>
<td>Add 1 if routinely vaccinated for HBV (yes or sometimes)</td>
<td>Add 1 if it performs a fibroscan or biopsy (yes or sometimes for</td>
</tr>
<tr>
<td>routinely</td>
<td></td>
<td>either)</td>
</tr>
<tr>
<td>vaccinated for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HBV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Add 1 if it performs a fibroscan or biopsy (yes or sometimes for</td>
<td>Maximum 1 point from 3 treatment components, weighted equally (1/3</td>
</tr>
<tr>
<td></td>
<td>either)</td>
<td>of a point each):</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Add 1/3 if treated for HCV (sometimes or yes);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Add 1/3 if treatment is free;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Add 1/3 if access to and use DAAs.</td>
</tr>
</tbody>
</table>

Note: Both HBV and HCV can therefore have a score of between 0 and 3. Due to small numbers, the score for both HBV and HCV was categorised as 1, 2 or 3.
Results

- 80/97 (82%) clinics completed the survey

- There were no significant differences between responding and non-responding clinics

- There were no differences between eastern European (EE) clinics and western European clinics for routine screening of HBV or HCV, but HBV vaccination and HCV treatment with DAAs varied significantly (Table 1)
## Results

### Summary of HBV and HCV screening, vaccination and treatment questions from the EuroSIDA clinic survey

<table>
<thead>
<tr>
<th></th>
<th>All of Europe</th>
<th>Western Europe</th>
<th>East Europe</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N centres %</td>
<td>N centres %</td>
<td>N centres %</td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>80 100</td>
<td>68 85.0</td>
<td>12 15.0</td>
<td></td>
</tr>
<tr>
<td><strong>N patients</strong></td>
<td>133,532 100</td>
<td>102,794 77.0</td>
<td>30,738 23.0</td>
<td></td>
</tr>
<tr>
<td>HBV routine screening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>5 6.2</td>
<td>5 7.4</td>
<td>0 0</td>
<td>0.99</td>
</tr>
<tr>
<td>Yes/sometimes</td>
<td>75 93.8</td>
<td>63 92.7</td>
<td>12 100</td>
<td></td>
</tr>
<tr>
<td>HCV routine screening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>12 15.0</td>
<td>10 14.7</td>
<td>2 16.7</td>
<td>0.99</td>
</tr>
<tr>
<td>Yes</td>
<td>67 83.8</td>
<td>57 83.8</td>
<td>10 83.3</td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>1 1.2</td>
<td>1 1.5</td>
<td>0 0</td>
<td></td>
</tr>
<tr>
<td>HBV vaccination</td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>No</td>
<td>16 20.0</td>
<td>8 11.8</td>
<td>8 66.7</td>
<td></td>
</tr>
<tr>
<td>Yes/sometimes</td>
<td>64 80.0</td>
<td>60 88.2</td>
<td>4 33.3</td>
<td></td>
</tr>
<tr>
<td>HCV treatment</td>
<td></td>
<td></td>
<td></td>
<td>0.10</td>
</tr>
<tr>
<td>No</td>
<td>4 5.0</td>
<td>2 2.9</td>
<td>2 16.7</td>
<td></td>
</tr>
<tr>
<td>Yes/sometimes</td>
<td>76 95.0</td>
<td>66 97.1</td>
<td>10 83.3</td>
<td></td>
</tr>
<tr>
<td>HCV treatment with direct acting antivirals¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>14 18.0</td>
<td>8 12.1</td>
<td>6 50.0</td>
<td>0.0090</td>
</tr>
<tr>
<td>Yes/sometimes</td>
<td>63 80.8</td>
<td>57 86.4</td>
<td>6 50.0</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>1 1.3</td>
<td>1 1.5</td>
<td>0 0</td>
<td></td>
</tr>
</tbody>
</table>

1. N=78 responses; 66 from non-east Europe and 12 from east Europe.
2. Austria, Belgium, Croatia, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Spain, Sweden, Switzerland, the United Kingdom.

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Barcelona, #HepHIV2014
Results
HBV vaccination and HCV treatment with DAA

Figure 1: HBV vaccination
- Western Europe
- Eastern Europe

No | Yes/sometimes
---|------------------
100 | 0
90  | 10
80  | 20
70  | 30
60  | 40
50  | 50
40  | 60
30  | 70
20  | 80
10  | 90
0   | 100

Figure 2: HCV treatment with direct acting antivirals
- Western Europe
- Eastern Europe

No | Yes/sometimes
---|------------------
100 | 0
90  | 10
80  | 20
70  | 30
60  | 40
50  | 50
40  | 60
30  | 70
20  | 80
10  | 90
0   | 100

Barcelona, #HepHIV2014
9,304 patients were enrolled in EuroSIDA from clinics participating in the survey.

- Among these, those from EE had lower odds of an HBV or HCV score of 3 (aOR 0.21 [95% CI 0.18–0.56 and 0.65; 0.55–0.77 respectively])

- Patients from larger clinics (n>200) were more likely to have an HBV score of 3 (aOR 1.38 [1.23–1.55]) but less likely to have an HCV score of 3 (aOR 0.86 [0.79–0.94])

Among 7,976 patients with fibrosis data, 498 (6.2%) had ≥F2 fibrosis. Gradually lower HBV scores related to a gradually higher risk of ≥F2 fibrosis (Fig); this trend was not observed for HCV

The relationship between HBV or HCV score for developing ≥F2 fibrosis was similar between regions
Results: Odds of liver fibrosis (≥F2), according to the Eurosida clinic’s HBV score and HCV score

**Adjusted for gender, ethnicity, HIV risk group, region, prior AIDS or non-AIDS, hepatitis B or C status, use of cART, VL < 500, CD4, age, CD4 nadir, time in EuroSIDA, size of centre, anaemia, hypertension, diabetes and smoking status

Barcelona, #HepHIV2014
Limitations

- Results may be indicative of general overall monitoring at the clinic and good follow-up, meaning e.g. that non-AIDS events will be captured and diagnosed.

- There may be differences between what a clinic answers in the survey and what happens in clinical practice. This would vary according to physician and the characteristics of the patient and likely clinical symptoms/severity/stage.

- The survey was administered in 2014, while those with liver fibrosis would have developed it much earlier.

- The generalisability of the results is affected as half of the responding EuroSIDA clinics were university clinics, almost half government affiliated and many in the capital and with a strong interest in research.
Conclusions

- EuroSIDA clinics outside of Eastern Europe reported a greater likelihood of vaccinating for HBV than those in EE and of using DAAs to treat HCV.

- A novel simple measure of quality of HBV care at the clinics was found to be inversely correlated with fibrosis-staging among patients followed in the clinic, suggesting concrete steps to improve care in clinics with a low HBV score. However, a high hepatitis management score for both HBV and HCV would always be something to aim for.
The EuroSIDA Study Group

Argentina: (M Kundo), Pulmonological University of Buenos Aires, Buenos Aires.

Austria: (V Nutter), Pulmologisches Zentrum der Stadt Wien, Vienna; R Zangerle, University Medical Innsbruck, Innsbruck.

Belarus: (I Karpov), Pulmologisches Zentrum der Stadt Wien, Vienna; R Zangerle, Medical University Innsbruck, Innsbruck.

Belgium: (M Raffaelli), Universitair Ziekenhuis Brussel, Brussels; E Featuret, Infectious Diseases Hospital, Brussels.

Bosnia-Herzegovina: (V Hadziosmanovic), Klinički Centar Univerziteta Sarajevo, Sarajevo.

Bulgaria: (B Knysz), Medical University, Wroclaw; A Horban, E Bakowska, Centrum Diagnostyki i Terapii AIDS, Warsaw; A Grzeszczuk, R Dabrowski, Medical University, Bialystok; M Parczewski, M Pynta, K Maciejewska, Ospedale Cotugno, III Divisione Malattie Infettive, Naples; P Hasse, C Amor, Ospedale Cotugno, III Divisione Malattie Infettive, Naples.

Denmark: (J Nielsen), G Kronborg, J Benfield, M Larsen, Hvidovre Hospital, Copenhagen; J Gerstoft, T Katzenstein, A-B E Hansen, P Skinhøj, Rigshospitalet, Copenhagen; C Pedersen, Odense University Hospital, Odense; L Ostergaard, Skejby Hospital, Aarhus; B Dragerst, Roskilde Hospital, Roskilde.

Estonia: (K Zilmer), West-Tallinn Central Hospital, Tallinn; Jela Smidt, Nakkusasuon Kaytlluk, Kohila-Järve.

Finland: (M Ristola), Helsinki University Central Hospital, Helsinki.

France: (C Kattama), Hôpital de la Pitié-Salpêtrière, Paris; J-P Vial, Hôpital-Dieu, Paris; P-M Girard, Hospital Saint-Antoine, Paris; P Vanhems, University Claude Bernard Lyon; P Cadoudal, Hopital de l'Arche; F Dabis, D Neau, Unité INSERM, Bordeaux; C Duviur, Hôpital Necker-Enfants Malades, Paris. Germany: (J Rockstroh), Universitätsklinik Hamburg Evomar, Hamburg; J Hulten, N van den Berg, University Medical Center Hamburg-Eppendorf, Infectious Diseases Unit, Hamburg; HJ Stellbrink, IPU Study Center, Hamburg; C Stefan, JW Goethe University Hospital, Frankfurt; J Bogner, Medizinische Poliklinik, Munich; G. Fäkerheuer, Universitätsklinik, Koln.

Georgia: (N Chkhartishvili), Infectious Diseases, AIDS & Clinical Immuno-Oncology Research Center, Tbilisi.

Greece: (J Kossidis), P Gragalias, G Xylomenos, J Perdios, Athens General Hospital; H Sambatakou, Ippokration General Hospital, Athens.

Hungary: (J Begovac), University Hospital of Infectious Diseases, Zagreb.

Ireland: (I Yust), D Turner, M Burke, Ichilov Hospital, Tel Aviv; E Shahar, G Hassoun, Rambam Medical Center, Haifa; H Elinav, M Haouzi, Hadassah University Hospital, Jerusalem; ZM Stoeger, AIDS Centre (Neve Or), Jerusalem.

Italy: (A D'Arminio Monforte), Istituto Di Clinica Malattie Infettive e Tropicale, Milan; M Galli, A Ridolfi, Osp. L. Sacco, Milan; (B Rozentale), Infectology Centre of Latvia, Riga; L Machala), D Jilich, Faculty Hospital Bulovka, Prague; J van Lunzen, O Degen, University Medical Center Hamburg-Eppendorf, Infectious Diseases Unit, Hamburg; HJ Stellbrink, IPU Study Center, Hamburg; C Stefan, JW Goethe University Hospital, Frankfurt; J Bogner, Medizinische Poliklinik, Munich; G. Fäkerheuer, Universitätsklinik, Koln.

Netherlands: (R Reiss), Academisch Medisch Centrum bij de Universiteit van Amsterdam, Amsterdam.

Norway: (V Ormaasen), A Maeland, J Plamholc, Malmö University Hospital, Malmö, A Thalme, A Sundberg, Karolinska University Hospital, Stockholm.

Portugal: (M Mota), C Ribeiro, C Oliveira, M Silveira, Hospital Santa Maria, Lisbon; P Moraes, Hospital de Egas Moniz, Lisbon; F Maltez, Hospital Curry Cabral, Lisbon. Romania: (R Radoi), C Oprea, Spitalul de Boli Infectioase din Bucuresti, Bucharest; A Horban, E Bakowska, Centrum Diagnostyki i Terapii AIDS, Warsaw; A Grzeszczuk, R Dabrowski, Medical University, Bialystok; M Parczewski, M Pynta, K Maciejewska, Ospedale Cotugno, III Divisione Malattie Infettive, Naples; P Hasse, C Amor, Ospedale Cotugno, III Divisione Malattie Infettive, Naples.

Serbia: (D Jevtovic), The Institute for Infectious and Tropical Diseases, Belgrade.

Slovakia: A Shunnar, D Stanekova, Dérer Hospital, Bratislava.

Sweden: (A Blaxhult), Venhaelsan-Sodersjukhuset, Stockholm; L Flismiak, Medical University, Riga; (B Knysz), J Gasiorowski, M Ingloet, Medical School, Warsaw; A Horban, E Bakowska, Centers for Disease Control and Prevention, Warsaw; A Grzeszczuk, R Dabrowski, Medical University, Bialystok; M Parczewski, M Pynta, K Maciejewska, Ospedale Cotugno, III Divisione Malattie Infettive, Naples; P Hasse, C Amor, Ospedale Cotugno, III Divisione Malattie Infettive, Naples.

United Kingdom: (B Gazzard), St. Stephen's Clinic, Chelsea and Westminster Hospital, London; AM Johnson, E Simons, ED Edwards, Mortimer Market Centre, London; A Phillips, MA Johnson, A Mocroft, Royal Free and University College Medical School, London (Royal Free Campus); C Orkin, Royal London Hospital, London; J Weber, G Scoulard, Imperial College School of Medicine at St. Mary's, London; M Fisher, Royal Sussex County Hospital, Brighton; C Leen, Western General Hospital, Edinburgh.

The following centers have previously contributed data to EuroSIDA: Bernhard Nocht Institut für Tropenmedizin, Hamburg, Germany; 1st I.K.A Hospital of Athens, Athens, Greece; Ospedale Riuniti, Divisione Malattie Infettive, Bergamo, Italy; Ospedale Cotugno, III Divisione Malattie Infettive, Napoli, Italy; Hospital Carlos III, Departamento de Enfermedades Infecciosas, Madrid, Spain;


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### HCV treatment questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>C15. Does the clinic provide treatment for HCV coinfection?</td>
<td>No, Yes, Sometimes, Do not know</td>
</tr>
<tr>
<td>C15a. If yes, is this free of charge?</td>
<td>No, Yes</td>
</tr>
<tr>
<td>C16. Does your centre have access to and use direct acting antivirals</td>
<td>No, Yes, Sometimes, Do not know</td>
</tr>
<tr>
<td>for treatment of HCV in people living with HIV?</td>
<td></td>
</tr>
</tbody>
</table>