Antibiotic resistance in the community

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• powers of Health to the governments of the autonomous communities

• absence of common databases

• nationwide prevalence studies

Spanish Urinary Tract Infection Study Group
Different breakpoints

60% CLSI
40% EUCAST
ARESC study in Spain

9 Spanish centers
Prospective 2003-2006
784 women with non complicated ITU
515 E. coli (79%)

Naber et al. Eur Urology 2008
Palau et al. Med Clin (Barc) 2011
Spanish Urinary Tract Infection Study Group (SUTIS)

multicenter nationwide prospective study in 89 Spanish institutions
2008-2009

2.4% ESBL
0.1% pAmpC

Palau et al. Med Clin (Barc) 2011
Cuevas et al. Diagn Microbiol Infect Dis 2010
ESBL: GEIH-BLEE projects

- **0.5% 2000**
- **4% 2006**
- **33% Community acquired**
- **86% ST131**

Díaz et al. J Clin Microbiol 2010
ESBL: GEIH-BLEE projects
pAmpC and carbapenemases

- 2009 100,132 isolates from 35 hospitals
- 0.64% pAmpC and 0.04% carbapenemases

OXA-48

ST11 + ST405

AMC resistance

- ARESC study (2003-2006) 22%
- SUTIS (2008-2009) 16%
- EARSS.

9% 2003 → 26% 2010

prospective multicenter study (REIPI)

January 2010 and May 2010: 257 isolates

AMC resistance

Prevalence of phylogroups

Phylogroup A
ST88

Phylogroup B2
ST131

67 OXA-1 producers

50% ST131

Fosfomycin resistance

- O25b/B2 isolates: 16.4%
- Females: 12.3%
- >65 years old: 11.0%
- Nursing home: 23.5%

Oteo et al. J Antimicrobial Chemother 2010
Fluorquinolones resistance

Non susceptible to ciprofloxacin

17.6% 2001 → 32.7% 2010

Cuevas et al. J Antimicrob Chemother 2011
ST131 *E. coli* in Spain

2009: 500 consecutives *E. coli* from 5 hospital (January-February

Previous treatment Amoxycillin/clavulanate (OR: 2.07; 95%CI: 1.08–3.96) fluorquinolones (OR: 2.48; 95%CI: 1.41–4.34)

<table>
<thead>
<tr>
<th>Resistant to:</th>
<th>ST131</th>
<th>3 clones</th>
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<tbody>
<tr>
<td>cotrimoxazol</td>
<td>18%</td>
<td>32%</td>
</tr>
<tr>
<td>Fluorquinolones</td>
<td>26%</td>
<td>38%</td>
</tr>
<tr>
<td>Amox/clav</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>ESBL</td>
<td>16%</td>
<td>19%</td>
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<tr>
<td>&gt;3 drugs class</td>
<td>23%</td>
<td>30%</td>
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</tbody>
</table>
Conclusions

- In Spain, *E. coli* shows higher resistance rates to amoxicillin/clavulanate, cotrimoxazol and quinolones than the rest of Europe.
- Nitrofurantoine and fosfomycin remained good activity
- Recently, isolates of *E. coli* from the community non susceptible to amoxicillin/clavulanate, fosfomycin and fluoroquinolones have increased in Spain
- ESBL producers showed a significant increased trend from 2000
- Carbapenemase producers are currently restricted to hospitals
- Although resistant isolates were genetically diverse, dissemination of the epidemic clone ST131 *E. coli* along with increase use of amoxicillin/clavulanate and fluoroquinolones could justify the observed raises.