Are ambulatory patients with heart failure treated in accordance with ESC guidelines?

Evidence from the ESC Heart Failure Long-Term Registry

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on the behalf of ESC HF LT Registry Investigators

No conflict of interest to disclose
12,440 patients from 211 centres of 21 ESC Countries

**Aim:** To evaluate how recommendations of European guidelines regarding pharmacological and non-pharmacological treatments for HF are adopted in clinical practice

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**Patient disposition**

- Total population n. 12785
- Consent No n. 345
- Consent Yes n. 12440
  - Hospitalized HF n. 5039 (40.5%)
  - Outpatients CHF n. 7401 (59.5%)
  - De Novo n. 1402
  - Worsening n. 3555
  - Unknown n. 82

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Rate of use and reasons for non use of recommended treatments in outpatients with reduced EF

**ACE-I/ARB**
- 1.9% Contraindicated: 92 pts
- 7.8% Not tolerated: 1033 pts
- 68.8% Real undertreatment: 3295 pts

**Betablockers**
- 92.7% YES: 4439 pts
- 7.3% NO: 353 pts

**MRAs**
- 67.0% YES: 3209 pts
- 33.0% NO: 1583 pts

**Contraindicated**
- n. 94 (2.0%)
  - Severe renal dysfunction: n. 61 (64.9%)
  - Symptomatic hypotension: n. 13 (13.8%)
  - Hyperkalemia: n. 8 (8.5%)

**Not tolerated**
- n. 123 (2.6%)
  - Worsening renal function: n. 22 (17.9%)
  - Symptomatic hypotension: n. 83 (67.5%)
  - Hyperkalemia: n. 6 (4.9%)
  - Angioedema: n. 2 (1.6%)
  - Other: n. 10 (8.1%)

**Real undertreatment**
- n. 155 (3.2%)

**Contraindicated**
- n. 78 (1.6%)
  - Asthma/COPD: n. 28 (35.9%)
  - Bradyarrhythmia: n. 11 (14.1%)
  - Symptomatic hypotension: n. 11 (14.1%)
  - PAD: n. 3 (3.8%)
  - Other: n. 25 (32.1%)

**Not tolerated**
- n. 165 (3.4%)
  - Bronchospasm: n. 39 (23.6%)
  - Symptomatic hypotension: n. 46 (27.9%)
  - Bradyarrhythmia: n. 22 (13.3%)
  - Worsening HF: n. 36 (21.8%)
  - Other: n. 22 (13.3%)

**Not indicated**
- n. 908 (18.9%)

**Real undertreatment**
- n. 110 (2.3%)

**Contraindicated**
- n. 268 (5.6%)
  - Hyperkalemia: n. 94 (35.1%)
  - Renal dysfunction: n. 153 (57.1%)
  - Other: n. 21 (7.8%)

**Not tolerated**
- n. 147 (3.1%)
  - Hyperkalemia: n. 53 (36.1%)
  - Worsening renal function: n. 34 (23.1%)
  - Gynecomastia: n. 34 (23.1%)
  - Other: n. 26 (17.7%)

**Not indicated**
- n. 908 (18.9%)

**Real undertreatment**
- n. 260 (5.4%)

Rate of outpatients at maximal target dosage of recommended pharmacological treatments

<table>
<thead>
<tr>
<th></th>
<th>At target n. (%)</th>
<th>Not at target and Reason for not at target, n. (%)</th>
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<tbody>
<tr>
<td><strong>ACE-I</strong>&lt;br&gt;(4710 pts)</td>
<td>1380 (29.3)</td>
<td>3330 (70.7)</td>
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<td>1123 (33.7) Still in uptitration</td>
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<td>866 (26.0) Symptomatic hypotension</td>
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<td>264 (7.9) Worsening renal function</td>
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<td>958 (28.8) Other/Unknown</td>
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<td><strong>ARBs</strong>&lt;br&gt;(1500 pts)</td>
<td>362 (24.1)</td>
<td>1138 (75.9)</td>
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<td>369 (32.4) Still in uptitration</td>
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<td>295 (25.9) Symptomatic hypotension</td>
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<tr>
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<td>115 (10.1) Worsening renal function</td>
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<tr>
<td><strong>Betablockers</strong>&lt;br&gt;(6468 pts)</td>
<td>1130 (17.5)</td>
<td>5338 (82.5)</td>
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<td>1871 (35.1) Still in uptitration</td>
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<td>904 (16.9) Symptomatic hypotension</td>
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<td></td>
<td></td>
<td>586 (11.0) Bradyarrhythmia</td>
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<td>1557 (29.2) Other/Unknown</td>
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<tr>
<td><strong>MRAs</strong>&lt;br&gt;(4226 pts)</td>
<td>1290 (30.5)</td>
<td>2936 (69.5)</td>
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<td>864 (29.4) Still in uptitration</td>
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<tr>
<td></td>
<td></td>
<td>350 (11.9) Hyperkalemia</td>
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<td>1378 (46.9) Other/Unknown</td>
</tr>
</tbody>
</table>
Rate of implantation of devices and reasons for non implantation

**ICD – Total population (7401 pts)**
- Already implanted (n. 1745)
- Not indicated (n. 4597)
- Indicated (n. 731)
- Unknown (n. 328)

- 323/731 = 44%
  - Indicated but not planned

**CRT – Total population (7401 pts)**
- Already implanted (n. 942)
- Not indicated (n. 5678)
- Indicated (n. 450)
- Unknown (n. 331)

- 178/450 = 40%
  - Indicated but not planned

**Reasons**

**ICD**
- Uncertainty in the indication: 161 pts
- Patient refusal: 81 pts
- Logistic/cost issue: 51 pts
- Unknown: 30 pts

**CRT**
- Uncertainty in the indication: 85 pts
- Patient refusal: 36 pts
- Logistic/cost issue: 34 pts
- Unknown: 23 pts

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The pharmacological treatment of patients with chronic HF can be considered acceptably adherent to the recommendations of current ESC guidelines.

However, less than a third of patients is receiving the target dosage of recommended drugs.

But when the reasons for non-adherence are appropriately taken into account the real rate of under-treatment or under-dosage is shown to be limited.

With respect to device implantation, the gap between guidelines and practice seems to be greater, probably due to different local medical practice but also to differences in healthcare systems.