Impaired heart failure self-care

The impact of fatigue

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Heart failure self-care

COMPLEX REGIMEN
What inspired us?

Fatigue and poor sleep: risk factors?

**AIM #1:** to examine whether self-reported fatigue is associated with impaired self-care over time

Baseline – 12 month FU – 18 month FU

**AIM #2:** to examine whether this association could be explained by sleep problems
Methods

• 545 patients with chronic heart failure (NYHA I-III)

• Mean age 66±10 years

• Multicenter

• Assessment at baseline, 12-, and 18 month follow-up
## Assessment of fatigue

### General fatigue
- 10-item Fatigue Assessment Scale (FAS)\(^1\)
  - I am bothered by fatigue
  - Mentally, I feel exhausted
  - I have problems thinking clearly
  - ...

### Exertion fatigue
- 9-item Dutch Exertion Fatigue Scale (DEFS)\(^2\)
  - Is it fatiguing for you to walk for 30 minutes?
  - Is it fatiguing for you to shop?
  - ...

Assessment of self-care & statistical analysis

Self-care

- 9-item European Heart Failure Self-care Behaviour scale (EHFScB-9)¹
  - I am on a low sodium diet
  - I limit the amount of fluids
  - ...

Consultation behavior

- 4-item EHFScB-9 subscale
  - I contact my doctor if I gain weight
  - I contact my doctor if my legs or feet are more swollen
  - ...

Statistical analysis: generalized linear mixed modeling*

*Handles correlated data, time-varying covariates, and allows an unequal number of repetitions

Assessment of poor sleep and covariates

**Poor sleep**

- 3-item subscale Health Complaints Scale (HCS)\(^1\)
  
  - Sleep that is restless and disturbed
  - Trouble falling asleep
  - Feeling you can’t sleep

**Other variables**

- Symptoms of Anxiety-Depression index (SAD\(_4\))\(^2\)
  
  - Medical records

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Differences in self-care at baseline

Unadjusted mean self-care scores stratified by fatigue levels (median split)

- Low general fatigue
- High general fatigue
- Low exertion fatigue
- High exertion fatigue

Note: higher scores reflect worse functioning

** p < .01
Differences in self-care at baseline

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** p < .01
Self-care: impact of fatigue over time

Unadjusted model

- General fatigue
  - Impaired self-care: $\beta = .09, p = .004$
- Exertion fatigue
  - Impaired self-care: $\beta = .05, p = .02$
  - Poor consultation behavior: $\beta = .05, p = .009$
  - Impaired self-care: $\beta = .04, p = .003$

* = if fatigue increases with one unit, this change is accompanied by an increase of .09 units in self-care scores
Self-care: impact of fatigue over time

Final adjusted model

Impaired self-care

General fatigue

Exertion fatigue

Sleep problems

β* = 0.09, p = 0.009

β = 0.03, p = 0.03

β = 0.04, p = 0.05

β = 0.04, p = 0.01

β = 0.09, p = 0.09

* = if fatigue increases with one unit, this change is accompanied by an increase of 0.09 units in self-care scores
## Self-care: impact of other factors

<table>
<thead>
<tr>
<th></th>
<th>Self-care</th>
<th>Consultation behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (male)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No partner</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Lower education</td>
<td>--</td>
<td>ns</td>
</tr>
<tr>
<td>Higher body Mass Index</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Diabetes mellitus</strong></td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>
Conclusion

Limitations:
• Self-report
• No information available on obstructive sleep apnea syndrome / no validated measure sleep disorder
• Screening index for mood symptoms

Strengths:
• Large sample size
• Prospective design
• Optimal data use
CONCLUSIONS + TAKE HOME MESSAGE

• Fatigue, not self-reported sleep problems, is a serious risk factor of poor self-care

• Patients with exertion fatigue are more at risk of poor consulting behavior

• Target fatigue to enhance self-care
Energy left for discussion?

THANK YOU FOR YOUR ATTENTION

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High fatigue levels were associated with...

Sociodemographics
- Gender (female)
- Currently not working

Clinical variables
- NYHA functional class III
- Co-morbidities (e.g., renal failure, COPD)
- Implantable device
- More diuretics, nitrates, and psychotropic medication
- Less use of beta blockers
- Poor sleep and mood symptoms

NOT: Left ventricular ejection fraction