Abstract: P2074

Sarcopenia and reduced physical fitness are associated with cardiac dysfunction in community-living older adults

Authors:
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Topic(s):
Chronic Heart Failure: Peripheral Circulation, Metabolism, Skeletal Muscle

Citation:

Funding Acknowledgements:
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Background/Introduction:
Sarcopenia is an ageing-related disorder characterised by impaired muscle strength, reduced gait speed (GS), and is associated with increased mortality, hospitalisation, and adverse outcomes. It has rarely been investigated in association with cardiac dysfunction in community-living older adults.

Purpose:
To evaluate the effects of sarcopenia on cardiac dysfunction and physical performance in community-living older adults.

Methods:
Individuals aged ≥60 y and without a history of heart failure were recruited from community and a Geriatric Day Hospital during 2017-18. A SARC-F score (range, 0-10 points) of ≥4 indicated the presence of sarcopenia. Handgrip strength per body mass index (HGS), GS, and 6-min walk distance (6MWD) were assessed. Echo was analysed according to standard international guidelines.

Results:
306 older adults were recruited. The prevalence of guideline-defined diastolic (DD) and systolic dysfunction was 67% and 4.3%, respectively. Among those recruited, 102 (33%) were sarcopenic and had reduced HGS, GS and 6MWD. The prevalence of DD was higher in the sarcopenia than non-sarcopenia group (82% vs. 59%, P<0.01). Sarcopenia was associated with DD after adjusting for co-morbidities (Table 1). Successive increase in SARC-F score from 0 to 1-2, 3-4, 5-6 and 7-10 was associated with increasing risks for DD by 1.8-fold (95% CI 1.0–3.3, P<0.05), 2.8-fold (1.4–5.6, P<0.01), 5.6-fold (2.1–14.8, P<0.01) and 12.8-fold (2.9–57.5, P<0.01), respectively.

Among individual SARC-F components, ‘carrying 10 pounds’, ‘walking across the room’, ‘climbing 10 stairs’, and ‘rising from bed or chair’ were associated with 2.27- to 8.86-fold increase in the risks for DD, while ‘fall(s) within 1 year’ was not associated. Decreasing physical fitness was associated with increasing risks for DD by 1.87-fold (95% CI 1.41–2.48, P<0.01) per 0.3 decrement in HGS, 1.83-fold (1.41–2.39, P<0.01) per 0.2-m/s decrement in GS, and 2.09-fold (1.55–2.82, P<0.01) per 100-m decrement in 6MWD.

Conclusion(s):
The prevalence of sarcopenia and DD was high in community-living older adults. Sarcopenia was associated with increased risk for DD and corresponding decline in physical fitness.

<table>
<thead>
<tr>
<th>Univariate logistic regression</th>
<th>Multivariate logistic regression</th>
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<tbody>
<tr>
<td>Any DD</td>
<td>Grade II–IV DD</td>
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<tr>
<td>Non-sarcopenia</td>
<td>Ref</td>
</tr>
<tr>
<td>Sarcopenia</td>
<td>3.20 (1.79–5.72)*</td>
</tr>
<tr>
<td></td>
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</table>

*P <0.01. Model I: adjusted for age. Model II: adjusted for hypertension, diabetes mellitus and ischaemic heart disease.
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Conclusion(s):

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<table>
<thead>
<tr>
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<td>3.00 (1.67-5.36)*</td>
<td>1.67 (0.87-3.19)</td>
<td>2.73 (1.50-4.96)*</td>
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<td>1.88 (0.99-3.58)</td>
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