How inflammation underlies physical and organ function in acutely admitted older medical patients

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Engelsk resume:

- Inflammation is associated with physical performance and organ dysfunction (FI-OutRef) in acutely admitted older medical patients.
- The association between FI-OutRef and physical performance is to some extend mediated by inflammation; mainly related to suPAR.
- suPAR and TNFα was unambiguously associated with all physical performance measures and FI-OutRef in unadjusted or adjusted analyses.

Abstract

Objectives
To investigate whether systemic inflammation in acutely admitted older medical patients (age >65 years) is associated with physical performance and organ dysfunction. Organ dysfunction’s association with physical performance, and whether these associations are mediated by systemic inflammation, was also investigated.

Methods
A cross-sectional study in an Emergency Department. Physical performance was assessed by handgrip strength and de Morton Mobility Index (DEMMI), and organ dysfunction by FI-OutRef, the number of standard blood tests outside the reference range. Systemic inflammation was assessed by suPAR, TNFα, and IL-6. Associations were investigated by regression analyses adjusted for age, sex, cognitive impairment, CRP, and VitalPAC Modified Early Warning Score.

Results
A total of 369 patients were evaluated. In adjusted analyses, suPAR and TNFα was associated with both physical performance measures (p < 0.001– p = 0.004), and IL-6 with handgrip strength (p = 0.007). All inflammation biomarkers were associated with FI-OutRef (p < 0.001). FI-OutRef was also associated with physical performance (all p < 0.001); suPAR being the inflammatory biomarker with the highest impact when adjusting for inflammation.

Conclusion
Inflammatory biomarkers are potentially feasible for systematic assessment of vulnerability. Moreover, suPAR may be an important mediator between organ dysfunction and physical performance.


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