Letters to the Editor

Priority Setting in Improving Hospital Care for Older Patients Using Clinical Decision Support

Despite rising attention and successful interventions, the quality of hospital care for older people remains suboptimal in some areas.1 Health care professionals need to adopt a specific approach for older patients that takes into account the patients’ vulnerability to adverse events, as well as individual preferences.1,2 Geriatric knowledge needed for this adoption is described in guidelines. However, implementation into daily practice is complex. Clinical Decision Support Systems (CDSSs) can support implementation of guidelines and improve quality of care.3,4 A CDSS is defined as “any computer program designed to help health care professionals to make clinical decisions.”5 A CDSS can help transfer knowledge to health care professionals and can teach them about the preferred management.6 CDSS has already been shown to improve quality of care for older patients.7,8 However, a CDSS is not always successful. The development should follow a user-centered approach and be based on the preferences of health care professionals.4,9 Currently, clinicians’ preferences and priorities for CDSS to support geriatric care are not known. Therefore, we conducted an expert consensus study followed by a national survey with the aim to identify causes of suboptimal hospital care for older patients, and set priorities for CDSS as perceived by a multidisciplinary team of health care professionals.

Methods

We performed a 3-round modified Delphi study and a national follow-up survey. For the Delphi rounds, a multidisciplinary expert panel was formed with health care professionals who specialized in geriatrics, clinical pharmacology, or quality of care, and who had additional experience in care improvements. For the national follow-up survey, participants had similar clinical backgrounds as the experts, but without the additional experience.

The first Delphi round consisted of semistructured interviews. The experts were asked to assess adherence to guidelines and quality indicators in clinical practice, and to identify the reasons for nonadherence and possibilities for CDSS. The interviews were transcribed and coded independently by 2 researchers (B.D. and K.P.)10

The second Delphi round was a consensus meeting in which the results of round 1 were discussed. Each cause of suboptimal care was rated and prioritized using 2 questions: “Is an intervention necessary?” and “Is an intervention with CDSS a possibility?”

Delphi round 3 and the national follow-up survey were digital surveys, including the causes on which experts reached consensus in round 2. The aim was to prioritize the (sub)causes and CDSS opportunities per cause for the same questions as in round 2.

Results

Twelve experts from 6 Dutch hospitals participated in the Delphi study and 73 health care professionals participated in the national follow-up survey. Based on qualitative analysis of the interviews, 5 categories for the causes of suboptimal care were identified (Figure 1). For 6 causes, consensus was reached on opportunities to improve care with CDSS: “discharge and aftercare,” “medication review,” “fall prevention,” “delirium care,” “planning,” and “communication with patients at discharge.” The expert group and the national follow-up survey had different opinions as to how important the causes “fall prevention,” “delirium care,” “planning,” and “communication with patients at discharge” were for improving care with CDSS. The expert group stated that “fall prevention” was more important and the national follow-up group rated “communication with patients at discharge” higher. However, the 2 groups did agree about the highest-rated CDSS opportunities within these causes. These CDSSs would support “selecting personalized interventions for falls and delirium,” “providing educational material about mobilizing,” and “patient-friendly discharge communication.”

Discussion

To our knowledge, this is the first study that provides an overview of the priorities for CDSS in improving hospital care for older patients from health care professionals’ perspectives. Although we cannot assume the results will reflect the wishes of other health care professionals in other countries, this is a good starting point for thinking about priorities of user-centered CDSS.

Our findings are of interest to those working on improving the quality of care for older patients and implementers of CDSS. Focusing CDSS development efforts to support “discharge and aftercare,” “medication review,” “fall prevention,” “delirium care,” “planning,” and “communication with patients at discharge” should improve user acceptance and commitment and be beneficial for older patients. Future work should cooperate with potential users of the proposed CDSSs to analyze their workflow and to design the CDSS.
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References


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Fig. 1. Fishbone diagram with causes of suboptimal hospital care for older patients. The causes in bold text with a mark were mentioned by at least half of the experts.
Sarcopenia According to the Revised European Consensus on Definition and Diagnosis (EWGSOP2) Criteria Predicts Hospitalizations and Long-Term Mortality in Rehabilitation Patients With Stable Chronic Obstructive Pulmonary Disease

Sarcopenia has been classically defined as the loss of skeletal muscle mass and function that occurs with advancing age. According to the original definition of the European Working Group of Sarcopenia in Older People (EWGSOP), diagnosis of sarcopenia required documentation of both low muscle mass and either low muscle strength or low performance. In the recently updated definition (EWGSOP-2), sarcopenia must be suspected in presence of low muscle strength and confirmed by documentation of reduced muscle mass. The 2 main objectives of this study were to determine (1) the prevalence of sarcopenia defined by EWGSOP-2 criteria in patients with stable chronic obstructive pulmonary disease (COPD) referred to pulmonary rehabilitation, and (2) the 2-year impact of sarcopenia on hospital admissions, length of stay, and mortality, considering associations with EWGSOP and EWGSOP-2 criteria and their individual components.

This retrospective cohort study of patients with COPD referred to physical rehabilitation between June 2015 and February 2016 excluded patients with exacerbations and/or all-cause hospital admissions in the previous 2 months. Main outcome variables, obtained from electronic medical records, were hospital admissions, length of stay, and mortality during a 2-year follow-up. The EWGSOP and EWGSOP-2 components were assessed as follows: fat-free mass by bioimpedance analysis, using sex-specific regression equations for COPD patients, handgrip strength by voluntary isometric contraction of the flexor muscles of the hand, and gait speed by the 4-m walking test. The association between sarcopenia (and individual components) and mortality was checked through proportional hazard models; the association with admissions (≥2) and hospital stays (≥10 days) was checked through binary logistic regression.

During the study period, 124 patients (aged 66.6 ± 9 years) were referred to physical rehabilitation. We excluded 23 women (no women with sarcopenia were identified by EWGSOP or EWGSOP-2 criteria) and 6 men (because of missing information in medical records). In the 95 patients included, the prevalence of sarcopenia was slightly higher according to EWGSOP-2 criteria (16.8% vs 13.1%). The associations of EWGSOP and EWGSOP-2 definitions and each individual component with mortality, admissions, and hospital stay were determined by proportional hazard models, summarized in Table 1. Sarcopenia was associated with an increased risk of 2-year mortality according to both definitions: hazard ratio (HR) 8.7 (95% CI 2.7-27.2), and HR 5.0 (95% CI 1.60-16.0), respectively. Among the individual components, patients’ 2-year mortality risk increased nearly 6-fold with low fat-free mass (95% CI 1.6-21.7), 3-fold with low handgrip strength (95% CI 1.0-9.7), and 6-fold with low gait speed (95% CI 1.9-19.0). The first 2 associations maintained significance after adjusting for age and obstruction severity; gait speed remained significant only when adjusted for age.

Sarcopenia was associated with higher odds ratios (ORs) of presenting ≥2 hospital admissions during 2-year follow-up according to EWGSOP (OR 3.8, 95% CI 1.2-11.5), EWGSOP-2 (OR 4.6, 95% CI 1.3-15.7), and 2 individual components: low handgrip strength (OR 4.06, 95% CI 1.5-10.8) and low gait speed (OR 3.9, 95% CI 1.1-13.5). These associations remained significant when adjusted for age and obstruction severity using both sets of EWGSOP criteria.

In terms of hospital stay, patients with sarcopenia had increased risk of longer stays (≥10 days) according to both EWGSOP (OR 3.4, 95% CI 1.1-10.3) and EWGSOP-2 (OR 5.7, 95% CI 1.65-19.5) definitions; this increased risk persisted after adjusting for age. Among the individual components, only low handgrip strength increased the risk of a longer stay (OR 4.07, 95% CI 1.5-10.9) in the crude analysis and after adjustments for age and obstruction severity.

In conclusion, the prevalence of sarcopenia in patients with stable COPD referred to physical rehabilitation is not negligible according to either EWGSOP or EWGSOP-2 criteria. All the individual components of both sets of EWGSOP criteria were associated with an increased risk of mortality, but only handgrip strength was also related to higher risk of hospitalization. Low fat-free mass also showed a strong association with mortality, as described in previous studies. Given the high hazard ratio associated with mortality, muscle wasting in COPD could indicate risk of sarcopenia and an ominous prognosis. Future research is needed to validate these findings in prospective longitudinal studies in other settings and in larger samples in order to determine potential differences according to phenotypical profiles.

The authors declare no conflicts of interest.

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