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Improving care for acutely presenting older patients visiting the emergency department: the implementation of geriatric screening in routine care

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ENGLISH SUMMARY

Introduction

In the past decades, the growing number of older people presenting to Emergency Departments (EDs) is slowly transforming the practice of emergency medicine. Older ED patients are at high risk of adverse health outcomes, such as mortality or functional decline. Early identification of those patients who are at highest risk gives an opportunity to target interventions and guide treatment decisions for those who need it most. This two-step approach with geriatric screening as a first step, followed by targeted interventions, is increasingly used in various health care settings, and several screening instruments have been specifically developed for older patients in the ED. However, the clinical value of using geriatric screening in the ED is still unclear and implementation of screening programs in the fast-paced environment of everyday ED practice remains scarce.

Aim of the thesis

To improve care for acutely presenting older patients visiting the ED, this thesis has two aims. The first aim of this thesis is to study the association of geriatric screening parameters collected in the ED with various adverse health outcomes in different subgroups of older ED patients. The second aim of this thesis is to investigate the feasibility, impact and experiences of implementing a geriatric screening program in routine ED practice.

Summary of key findings

This thesis is divided in two parts. The first part of this thesis describes the motivation regarding the strategy of using geriatric screening in ED care. In the ED, geriatric characteristics are not routinely measured and taken into account. Risk stratification is executed by means of triage tools, which are based on clinical urgency to prioritize patients and rapidly diagnose potentially lethal illness. In **chapter 2** the added value of combining a geriatric screening tool and an urgency triage tool in the ED was explored. Within all triage urgency levels, older patients with a high-risk geriatric screening result had a three times higher 30-day mortality rate than patients who were identified as low risk. Combining triage with geriatric screening has the potential to improve identification of high-risk older patients and facilitates a holistic approach in older patients in the ED using both disease severity and geriatric impairments. The use of geriatric screening therefore gives an opportunity to improve care in acutely ill older patients as early as arrival in the ED. This also applies to the population of older ED patients that visit the ED due to a fall, which we studied in **chapter 3**. This chapter aimed to study whether fall characteristics and the result of geriatric screening are independently associated with adverse health outcomes in older patients with fall-related ED visits. Although a minority of this population had a high-risk screening result in the ED, the geriatric screening result was an independent risk factor of 3- and 12-months functional decline

and mortality. In addition to unravelling the cause and location of the fall, geriatric screening could therefore help identifying patients at high risk of poor outcomes. Furthermore, because the ED is only one part of the acute care chain, we aimed to study whether geriatric screening in the ED could also be used to guide treatment decisions and care planning during hospital admission. In **chapter 4** we therefore investigated the association between geriatric screening in the ED and various clinical outcomes and long-term adverse outcomes in acutely hospitalized internal medicine patients. Older patients with a high-risk geriatric screening result had a longer hospital length of stay and were more often discharged to a nursing home compared with low-risk screened patients. One year after the acute admission, two-thirds of the patients with a high-risk geriatric screening result had deceased or showed a decline in function, with an overall 1.5-fold higher risk compared with low-risk screened patients. Geriatric screening in the ED therefore also identifies older patients at high risk of long-term poor outcomes and provides valuable information for care providers treating acutely hospitalized older patients.

The second part of this thesis consists of studies about the implementation of geriatric screening in routine ED care. In **chapter 5** the feasibility and acceptability of the use of geriatric screening in the ED was studied. The Acutely Presenting Older Patient (APOP) screener was implemented in routine practice in the ED of the Leiden University Medical Center (LUMC) from March 2018, and evaluated during two months shortly after implementation. Geriatric screening was feasible and could be completed in approximately 60% of all older ED patients, with a stable screening rate over time. Patients had a lower probability of being screened when they were younger, when they had a higher disease severity or when the ED was busy. Screening was accepted by the users (triage nurses) who stated it is important and useful. The busy ED environment was most often experienced as a barrier of screening completion. **Chapter 6** studied the effects of the implementation of the APOP screening program, comprising both screening and interventions for high-risk screened patients, in a before-after study design. All older ED patients two months before and two months after implementation were included in the study. Results show that interventions for high risk patients in the ED were partly adhered to. Implementation of the program resulted in increased numbers of executed comprehensive geriatric assessments during hospitalization, which has known positive effects on patient outcomes, and resulted in communication of screening results to the general practitioner and telephone follow-up after ED discharge. Implementation had no major effects on the ED length of stay and hospital admission of older patients. In **chapter 7** experiences and attitudes of older patients regarding the use of geriatric screening in the ED were explored. Within this qualitative study, individual semi-structured interviews were conducted with older patients who completed the APOP screener while visiting the ED of the LUMC. Older patients had noticed little of the screening administration during triage and screening was considered as a normal part of ED care. They had predominantly positive attitudes towards its use in the ED.

Most of the patients believed that geriatric screening contributes to assessing older patients holistically, recognizing geriatric problems early and comforting patients with communication and attention.

Discussion

The results of the first part of this thesis show that geriatric screening can be used to identify older ED patients at high risk of various short- and long-term adverse health outcomes. The geriatric screening results provide valuable information for care providers both in- and outside the ED. In the ED, geriatric screening could improve triage. Outside the ED, for example during hospital admission, the results from geriatric screening could aid in individualized treatment decisions to acquire more personalized care, and therefore gives an opportunity to optimize outcomes for older patients.

The results of the second part of this thesis show that the implementation of geriatric screening in routine ED care is feasible. Additionally, the use of screening is accepted by both the users (the triage nurses) and the consumers (the older patients). It is important to keep in mind that this thesis focused on the implementation of one screening instrument (the APOP screener) in one particular setting (a Dutch academic hospital), and that the program was evaluated only shortly after implementation. More research will be needed to investigate implementation in different hospitals and ED settings to generate guidance on how geriatric screening tools can be successfully implemented on a wide scale. Recurring cycles of evaluation and improvements will play a central role in achieving successful implementation and long-term sustainability.

Future research should focus more on implementation and effectiveness. Evaluating implementation of screening programs in routine ED care may help us answer the question which screening tool and which interventions are most suitable for which healthcare system or hospital. Whether geriatric screening and subsequent interventions have effects on reducing adverse health outcomes in older ED patients remains to be studied. In order to improve the outcomes of older ED patients, further attention should be paid to collaboration, both in practice as in science. In practice, we will need to work together with all health care providers involved during the acute care episode of an older patient. In science, we have to keep learning from each other. The experiences with the development and implementation of the APOP screening program in routine ED care can be very useful for other hospitals to generate guidance on how geriatric screening tools can be successfully implemented.

