



Available online at
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com/en



Specific care programme for the elders

A multidisciplinary care pathway for the evaluation of falls and syncope in geriatric patients



J.F.H. Wold^a, J.H. Ruiter^b, J.H. Cornel^b, R.L.C. Vogels^c, R.W.M.M. Jansen^{a,*}

^a Department of Geriatric Medicine, Medical Center Alkmaar, Wilhelminalaan 12, 1815 Alkmaar, JD, The Netherlands

^b Department of Cardiology, Medical Center Alkmaar, Wilhelminalaan 12, 1815 Alkmaar, JD, The Netherlands

^c Department of Neurology, Medical Center Alkmaar, Wilhelminalaan 12, 1815 Alkmaar, JD, The Netherlands

ARTICLE INFO

Article history:

Received 9 March 2015

Accepted 25 May 2015

Available online 19 June 2015

Keywords:

Care pathway

Non-accidental falls

Syncope

Evaluation

Lean six-sigma methodology

ABSTRACT

Introduction: A multidisciplinary care pathway based on current guidelines was developed to evaluate unexplained non-accidental falls and/or syncope in geriatric patients aged 65 years or older.

Material and methods: We applied the lean six-sigma methodology. In the assessment phase, we defined the historic level of care for syncope patients in a small sample of patients. In the improvement phase, we developed a new clinical pathway with a close collaboration between geriatricians, cardiologists and neurologists. This 2 day structured diagnostic program included a comprehensive geriatric assessment, evaluation of nutritional status and disabilities, laboratory tests, and 12-lead electrocardiogram. In case of fall problems, brain-MRI or CT scans were performed. Blood pressure measurements for orthostatic and postprandial hypotension were performed. When indicated, patients were seen by a neurologist, cardiologist, dietician or old age psychiatrist. During the sustain phase, we implemented our new program and critically evaluated 262 patients.

Results: Of the 262 patients, aged 79.6 ± 6.5 years, only 44 patients were referred for evaluation of syncope while in 117 patients, a syncope was diagnosed. Sixty-one patients were diagnosed with both a syncope and separate falls. Only 6 of the 117 elderly patients had syncope without falling.

Conclusions: With this novel multidisciplinary pathway for the combined evaluation of unexplained non-accidental falls and syncope, we achieved a diagnosis in 89% with a large overlap between falls and syncope. Therefore, cardiologists, neurologists and geriatricians should collaborate for the evaluation of falls and syncope.

© 2015 Elsevier Masson SAS and European Union Geriatric Medicine Society. All rights reserved.

1. Introduction

Non-accidental falls and syncope are major public health issues among older adults, and especially among very elderly persons. Approximately one-third of community-dwelling elderly subjects aged 65 years and older fall at least once each year and 15% fall at least twice a year [1,2]. According to the European Society of Cardiology (ESC) guidelines, non-traumatic transient loss of consciousness (T-LOC) is divided into syncope, epileptic seizures,

psychogenic and miscellaneous causes [3]. Syncope is defined as a T-LOC due to transitory global cerebral hypoperfusion characterized by rapid onset, short duration, and spontaneous and complete recovery [3]. Syncope is a common problem in the elderly. Above 70 years of age, it rapidly increases with an incidence rate of approximately 50% in people aged 80 years according to the Framingham studies [4]. A Danish nationwide study found that the incidence rates of syncope were found higher than reported before, rising from 40.2 per 1000-years at 70 years to 81.2 in the age group above 80 years [5]. Due to the nature of syncope, there will be a loss of muscle tone and subsequently the clinical manifestation is often a fall. In the evaluation of falls in the elderly, syncope as a cause of a fall should always be considered. It has been recognized that patients with syncope often presents with unexplained falls [6]. There is a significant overlap between non-accidental falls and syncope in elderly subjects and they are often indistinguishable [6,7].

Abbreviations: T-LOC, Transient Loss of Consciousness; FSDC, Fall and Syncope Day Clinic; ESC, European Society of Cardiology; CGA, Comprehensive Geriatric Assessment; BP, Blood Pressure; CSM, Carotid Sinus Massage.

* Corresponding author. Department of Geriatric Medicine, Medical Center Alkmaar, Wilhelminalaan 12, 1815 JD, Alkmaar, The Netherlands.
 Tel.: +31725482370.

E-mail address: r.w.m.jansen@mca.nl (R.W.M.M. Jansen).

<http://dx.doi.org/10.1016/j.eurger.2015.05.007>

1878-7649/© 2015 Elsevier Masson SAS and European Union Geriatric Medicine Society. All rights reserved.

The causes of syncope are diverse and in the elderly there might be multiple causes as explanation [8,9]. Multiple causes are independent predictors of increased mortality [9]. In only half of the patients, a witnessed account for a syncope event is available [3]. Thirty to fifty percent of patients with witnessed syncope have amnesia for the loss of consciousness [10]. The prognosis of syncope can be defined in terms of risk of syncopal recurrences, falls, with negative consequences on anxiety and insecurity and leading to a negative impact of the quality of life [7]. Previous studies have shown that patients with a cardiac cause for the syncope have higher mortality than patients with non-cardiac syncope [11]. Poor outcomes are associated with the severity of the underlying disease rather than with syncope per se [12]. Therefore, it is of great importance to determine the cause of syncope.

The costs of falls and fall-related injuries are substantial. In the Netherlands, the mean costs per fall were 9370 euro, and increased with age to almost 15,000 euro at ages of 85 years or older [13].

Management of falls and syncope in an elderly geriatric population is challenging. In up to 60% of cases, a witness account is not available [3]. Even if state-of-the-art diagnostic procedures are followed in specialized clinics, about 35% of the patients are left without a good explanation for their syncope [14,15]. Geriatric patients with falls and/or syncope are generally being evaluated within different specialties, including cardiology, neurology, internal medicine, geriatric medicine, surgery or emergency room physicians. In the Dutch health care system, the patients who are presented to health care professionals with a fall of syncope will primarily be seen by the general practitioner. Patients presenting for acute care are typically admitted to a hospital and observed for some time. Diagnostic tests are performed depending on which etiology is suspected. Elderly patients with frequent unexplained fall and/or syncope will visit the hospital multiple times, visiting different specialists and being subjected to different diagnostic tests. Sometimes a diagnostic test will be performed multiple times. As a result of these confusing diagnostic procedures, the time to establish a diagnosis will increase, and it may be questioned whether all patients have undergone the appropriate tests.

To evaluate both unexplained non-accidental falls and/or syncope, we developed a novel multidisciplinary pathway for the evaluation in geriatric patients aged 65 years or older based on the current ESC guidelines on syncope and the guidelines on the evaluation of falls [3,16,17]. In this study, we describe the development of a multidisciplinary work-up with a close collaboration of geriatricians, cardiologists and neurologists at the medical center in Alkmaar according to the lean sigma principles [14].

2. Material and methods

The multidisciplinary pathway was developed by a working group, consisting of a geriatrician, cardiologist, neurologist, nurse practitioner, a physiotherapist and a general manager of the department of geriatric medicine. The nurse practitioner was the pathway coordinator and took care of the medical care of the first patients in the initial phase of the program. During the development period, an expert in the lean six-sigma methodology affiliated with Medtronic Hospital Solutions, Heerlen, the Netherlands (Stijn J. Schretlen, MD) joined the working group. The principles of this methodology have been published recently [14]. Subsequently, several focus meetings were arranged for all multidisciplinary caretakers who may become involved with the care for these geriatric patients with non-accidental falls and/or syncope. The lean six-sigma methodology is a highly structured method to optimize the level of care, and in brief consists of three essential phases: assess, improve and sustain phase. The approach of the working group was divided into these three essential steps. At the first meeting of the working group, we defined the goals and

success parameters. The most important reasons to decide to develop a clinical pathway were to improve the care of frail elderly patients with unexplained falls or syncope, to optimize the diagnostic pathway, to reduce the time period for the diagnostic pathway and to prevent needless investigations. Based on the current literature of elderly patients with syncope, we hypothesized that elderly patients with syncope would be presented as patients with a fall [3]. Therefore, we decided that we had to combine the fall and syncope evaluation in these geriatric patients within one diagnostic care pathway. To optimize and standardize the diagnostic evaluations we followed the ESC guidelines for the diagnosis and management of syncope and the current guidelines for fall evaluation [3,16,17].

Arbitrarily, we only included patients aged 65 years or older with unexplained falls or T-LOC. We defined our success parameters as followed: to see all patients within 4 weeks following referral, to limit the diagnostic time period to a maximum of 2 weeks, to perform all necessary investigations according to the guidelines, including the cardiology and neurology investigations within this time period, and to report the general physician within one week after finishing the program.

During the assessment phase, we evaluated the medical charts of 71 recent patients who were evaluated for syncope at the departments of cardiology or geriatric medicine. During the improvement phase, we developed a new optimal clinical pathway plan including best practices, standardized decision trees and we developed an ICT program for the diagnostic pathway to standardize the pathway with a logistic planner.

Finally, during the sustain phase, we performed a critical evaluation of a pilot phase and refined the diagnostic pathway. The patient experience was captured during this period and we also monitored compliance with guidelines and the referral criteria of the patients. After the pilot phase, patient outcomes were monitored and evaluated for the diagnostic yield, which we defined as a cause of the fall or T-LOC or the conclusions leading to a treatment.

All data were entered into a SPSS statistical file and analyzed by descriptive statistics including frequencies, means and standard deviations and percentages to determine subject characteristics. To evaluate the normal distribution of continuous data, we used the Kolmogorov-Smirnov tests. Continuous variables with a normal distribution were analysed with the *t*-tests, otherwise the Pearson Chi-squared test was used. Data are presented as means \pm SD. *P*-values are considered significant if < 0.05 . We used the SSPS version 20 software (SPSS Inc., Chicago, IL, USA).

3. Results

The assessment phase was carried out from January till the end of June in 2011. In November 2011, we started with a pilot phase till the end of December and in the beginning of 2012, we refined the clinical pathway. We continued this program and included a total of 262 patients, aged 65 years or more in May 2014. In this paper, we report the results of the different phases of the care pathway improvement project and report the overall results of the included patients.

We did not request specific patient consent and ethical board approval because the study was based on the standard evaluation of geriatric patients with falls and/or syncope, without any implication in therapeutic decisions or use of sensitive patient data.

3.1. Assessment phase

We started to define the historic level of care for syncope patients at the departments of cardiology and geriatric medicine.

Download English Version:

<https://daneshyari.com/en/article/3323949>

Download Persian Version:

<https://daneshyari.com/article/3323949>

[Daneshyari.com](https://daneshyari.com)