

Aldona Kubica 

Collegium Medicum, Nicolaus Copernicus University, Bydgoszcz, Poland

Self-reported questionnaires for a comprehensive assessment of patients after acute coronary syndrome

Corresponding author:

Aldona Kubica, Collegium Medicum,
Nicolaus Copernicus University,
Bydgoszcz, Poland,
e-mail: aldona.kubica@gmail.com

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ABSTRACT

Effective patients' preparation for discharge is expected to improve adherence to long-term treatment and functioning in chronic phase of coronary artery disease—ameliorating clinical outcome. This paper is aimed to introduce the strategy of comprehensive post-ACS in-hospital patients' evaluation regarding readiness for hospital discharge, as well as a post-discharge assessment of adherence to pharmacological treatment and functioning in the chronic phase of the coronary artery. A system of diagnostic tools allowing assessment of patients during hospitalization and after discharge has been developed. The Readiness for Hospital Discharge after Myocardial Infarction Scale (RHD-MIS) was designed for in-hospital evaluation, while the Adherence in Chronic Diseases Scale (ACDS) and the Functioning in Chronic Illness Scale (FCIS) for examination during follow-up visits. They are expected to reflect the effectiveness of different aspects of patient-medical staff collaboration. Use of questionnaires seems to be a method of choice for this purpose because of the simplicity, easiness of their application, and low cost. Self-reported questionnaires allow comprehensive in-hospital and post-discharge assessment of patients after ACS.

Key words: self-reported questionnaire, adherence to treatment, coronary artery disease

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Introduction

Therapy consistent with medical guidelines after acute coronary syndrome (ACS) has been shown to effectively reduce the prevalence of adverse cardiovascular events, however, the adherence to long-term pharmacotherapy tends to be insufficient [1–3]. Therefore, extensive in-hospital education should be a standard of care in patients with ACS [4,5]. To ensure patient understanding, satisfaction and safety, discharge planning, including the assessment of patients' readiness for discharge, should be applied [6–8]. Such an evaluation allows a personalized definition of needs for additional educational intervention [9]. It is expected that effective patients' preparation for discharge will improve adherence to long-term treatment and functioning in chronic phase of disease improving clinical outcome [6, 7, 10].

This paper is aimed to introduce the strategy of comprehensive post-ACS in-hospital patients' evaluation regarding readiness for hospital discharge, as well as a post-discharge assessment of adherence to pharmacological treatment and functioning in the chronic phase of the coronary artery.

Methods

Self-reported questionnaires are suitable for common use allowing identification of patients with ACS of insufficient preparation for discharge from hospital, subjects of increased risk of low adherence to treatment after discharge as well as bad functioning in chronic illness [3, 11, 12]. Therefore a system of diagnostic tools allowing assessment of patients during hospitalization and after discharge has been developed. A comprehensive, multi-stage assessment of patients should improve the quality of medical care by personalizing educational and therapeutic interventions after ACS [13–15]. The Readiness for Hospital Discharge after Myocardial Infarction Scale (RHD-MIS) [7] was designed for in-hospital evaluation, while the Adherence in Chronic Diseases Scale (ACDS) [16, 17] and the Functioning in Chronic Illness Scale (FCIS) [18] for examination during follow-up visits.

Assessment of readiness for hospital discharge

The discharge from the hospital is a multifactorial, interdisciplinary, individualized process of transition

from hospital to outpatient care, requiring efforts aimed to meet patients' expectations and needs as well as to negotiate the agreement regarding a therapeutic plan for the post-discharge period [19–22]. Therefore a tool enabling the efficient assessment of the patients' knowledge, expectations, and concerns, as well as indicating the field requiring additional intervention in clinical conditions should be widely applied. The previously developed Readiness for Hospital Discharge Scale (RHDS) was tested in a sample of adult medical-surgical patients without any specific illness [20]. The recently validated RHD-MIS was designed for subjects after myocardial infarction [7]. The validation procedure was performed in 201 patients recovered for ACS and treated with the percutaneous coronary intervention (PCI). The questionnaire consists of 23 questions: 18 self-reported by patients (the subjective assessment of patients' knowledge — 7 items, expectations of patient — 9 items) and 7 assessed by the medical staff during a consultation with the patient (the objective assessment of patients' knowledge — 7 items), each scored from 0 to 3 points. The additional five not-scored items reflect the patient's situation and do not measure the intensity of any feature. The internal consistency of the entire RHD-MIS was satisfactory with an α -Cronbach coefficient of 0.789. The RHD-MIS fulfilled the assumption of factor analysis: the determinant of the correlation matrix was 0.001, Kaiser-Mayer-Olkin (K-M-O) statistic was 0.723, and the Bartlett' test of sphericity was statistically significant. The analysis of the internal consistency of the three areas confirmed the rightness of the distinguishing of three subscales. According to our knowledge, the RHD-MIS is the first validated survey taking into account the specificity of patients with ACS. It was developed as a tool aimed to improve the quality of the discharge process, including additional personalized education and motivation [7]. Further investigation is needed to assess the potential impact of RHD-MIS scoring on long-term outcome.

Assessment of adherence to long-term medication

Poor adherence to long-term medication is known to reduce the effectiveness of applied therapy making it a critical issue in high-risk populations [16, 23]. Interventions aimed to improve adherence are expected to ameliorate the clinical outcome in patients after ACS [24]. Hence, there is a need for a reliable tool allowing identification of subjects prone to not follow the ordered therapy. Several self-reported questionnaires were developed for this purpose. The survey should be simple and easy to apply in everyday practice. Moreover, it should determine the most common reasons of non-adherence. The ACDS has been validated in 401 patients with stable coronary artery disease [16]. Initially, it has been designed as an 8 — items

self-reported questionnaire to reflect the actual implementation of the treatment plan in terms of provided pharmacotherapy as well as facilitate identification of mechanisms determining adherence in adult patients with chronic illnesses. All the questions refer to determinants of adherence associated with behaviours and determinants that can indirectly influence the adherence and are related to situations and patients' convictions. According to the results of the validation procedure, one question has been excluded. Finally, the internal consistency for the remaining 7 items was satisfactory with an α -Cronbach coefficient of 0.752. The determinant of the correlation matrix was 0.211, the value of K-M-O statistic was 0.848 and Bartlett's test of sphericity was statistically significant [16]. We believe that the ACDS indicating subjects of low adherence has the potential to improve patient — a health care professional communication and relationship, which are the key points providing higher adherence to the specific therapy. However, further studies are required to assess the correlation between the ACDS results and actual adherence to medication. Several language ACDS versions (Portuguese, Spanish and Turkish) currently undergo validation procedures.

Recently, a variant of the ACDS — the ACDS-diet has been also developed. It is dedicated for evaluation of adherence to the diet. The results of ongoing simultaneous validation studies of Polish and Portuguese versions are expected at the end of 2019.

Assessment of functioning in the chronic illness

The impact of the disease essentially covers all areas of human functioning, including physical activity, emotional and spiritual sphere, and functioning in society resulting in lower self-value perception, deterioration in well-being, an increase of anxiety and uncertainty about the future [25–28]. However, the available tools are aimed to evaluate only single aspects of the chronic disease impact on human life e.g. quality of life, physical and mental functioning, level of disease acceptance, self-efficacy or health self-control location [29–32]. Therefore, a new diagnostic tool to assess the overall functioning of the patient in chronic disease has been created. The FCIS has been designed to evaluate the impact of the disease on the patient, the patients' impact on the disease and the impact of the disease on patients' attitudes [18]. It has been validated in 366 coronary artery disease patients previously treated with PCI. The questionnaire consists of 24 questions divided into three parts, with a catalogue of 5 answers added to each question. The value of the α -Cronbach coefficient for the entire questionnaire was 0.855 indicating that the questionnaire is reliable and homogenous. The set of all 24 questions fulfilled the requirement of the factor analysis, i.e. the value of the determinant of the

correlation matrix was 0.001, K-M-O parameter was 0.843 and the Bartlett's test of sphericity was statistically significant [18]. According to our knowledge, FCIS is the first tool allowing the comprehensive assessment of physical and mental functioning dedicated for patients with chronic diseases. The FICS allows the assessment of various aspects of patients' functioning with chronic disease in a quick and simple way, without the use of several different tools. Such an approach should allow diagnosing deficit areas in order to implement appropriate therapeutic and educational interventions [33]. The Portuguese versions of this questionnaire are currently validated.

Discussion

The described strategy of comprehensive in-hospital and post-discharge evaluation of patients after ACS has been implemented into several clinical protocols [34–36]. However, all these tools (RHD-MIS, ACDS, and FCIS) were designed to improve the quality of every-day clinical practice. They are expected to reflect the effectiveness of different aspects of patient-medical staff collaboration. Use of questionnaires seems to be a method of choice for this purpose because of the simplicity, easiness of their application, and low cost. Moreover, questionnaires may also be helpful for differentiation of mechanisms of resistance to treatment [37–39]. Questionnaires are population-specific and need validation in specific clinical settings [40, 41]. All presented tools were tested in patients with coronary artery disease after ACS treated with PCI [7, 16, 17, 18, 42]. Their application in populations with different diagnosis or in other cultural and language environment needs additional validation to ensure consistency and reliability of results.

Conclusion

Self-reported questionnaires allow comprehensive in-hospital and post-discharge assessment of patients after ACS.

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