Available online at www.sciencedirect.com

ScienceDirect

Cor et Vasa

Review article

Early discharge (within 72 h) in low risk patients after acute ST-segment elevation myocardial infarction treated with primary percutaneous coronary intervention. Single centre experience

CrossMark

Kamil Novobílský [*], *Radim Kryza, Petr Černý, Vladimír Kaučák, Jan Mrózek, Ivo Horák*

Department of Cardiology, Municipal Hospital Ostrava, Czech Republic

ARTICLE INFO

ABSTRACT

Within past decades the clear trend towards the shortening of the hospital stay in patients with myocardial infarction with ST segment elevations (STEMI) has been observed. The current Guidelines of European Society of Cardiology for the management of acute STEMI state, that in the selected patients may be considered early discharge (after approximately 72 h), if adequate follow-up is arranged.

Authors present prospective analysis of 25 low risk patients with STEMI, treated with successful primary percutaneous coronary intervention (PCI) and discharged within 48–72 h after admission.

Only 1 unplanned hospitalization for non-cardiac cause and no other serious complications were observed within 30-day follow-up.

Presented data demonstrate that early discharge after STEMI in selected low risk patients is feasible and safe with regard to the conditions of regular clinical practice. This strategy applies to at least 14% patients with low risk of subsequent complications.

© 2014 Published by Elsevier Urban & Partner Sp.z.o.o. on behalf of the Czech Society of Cardiology.

Contents

  [*] *Corresponding author at*: Kardiologie, Městská nemocnice Ostrava, Nemocniční 20, 728 80, Ostrava, Czech Republic. Tel.: +420 596 194 279; fax: +420 596 192 343.
    E-mail address: k.novobilsky@mnof.cz (K. Novobílský).

Introduction

Within past decades the clear trend towards the shortening of the hospital stay in patients admitted with the diagnosis of STEMI has been observed [1]. Together with that it has been repeatedly proved that the reduced hospital stay leads to reduction of health cost [2–4].

The current Guidelines of European Society of Cardiology for the management of acute myocardial infarction with ST-segment elevation, released in 2012, state, that in the selected patients may be considered (class of recommendation IIb) early discharge (after approximately 72 h), if adequate follow-up is arranged [5]. Level of evidence of cited recommendation is B, i.e. it is based on data, derived from a single randomized clinical trial or large non-randomized studies. The data of its implementation to clinical practice have been quite limited.

The aim of our prospective analysis is to assess feasibility and safety of the early discharge (48–72 h) in the conditions of everyday clinical practice, the portion of patients, this strategy could be applied to, as well as to encourage wider discussion in order to provide this approach to the greatest number of patients with regard to their safety, comfort and preference.

Methods

179 consecutive patients with diagnosis of STEMI, treated with primary PCI were admitted to our centre within the period between February 16 and December 20, 2013. 25 (14%) of them fulfilled given criteria for early discharge (Table 1).

Their baseline characteristics are shown in Table 2.

As for reasons excluding patients from the analysis, the most frequent was the combination of several factors (39%), followed by low left ventricular ejection fraction (17%), multi-vessel disease (13%), comorbidities (11%), age (9%) and other rare factors.

Mean time "door-to-balloon" was 41 min, radial approach was used in all of probands. Two thirds of implanted stents were drug-eluting, manual thrombaspiration was used in almost three quarters of patients. Procedural data are listed in Table 3.

Not surprisingly the inferior infarctions have predominated (Fig. 1); accordingly right coronary artery as the infarct-related artery was present in 60%, before PCI 28% of infarct-related arteries were totally occluded; on the contrary almost half of them showed normal flow (Fig. 2).

Our centre does not use ordinarily transport back to referring hospital; the stress test before discharge is not routinely performed.

Clinical control in outpatient clinic was performed no later than 3 days after discharge. All patients completed 30-day follow-up.

Results

Within 30-day follow-up no death, myocardial infarction (MI), unstable angina, stroke, repeated target vessel revascularization, stent thrombosis or complication associated with arterial access occurred in studied cohort (Table 4). One patient had to be rehospitalized for non-cardiac reason (back-pain) in Department of Neurology, and one patient was 2 days after discharge examined and treated in Dermatology outpatient clinic for exanthem of non-allergic origin.

The length of stay was 62 ± 8 h (median 67.5 h, the earliest discharge in 48 h). Left ventricular ejection fraction, assessed by echocardiography, was 53 ± 5%.

Discussion

As a logical consequence of advance in therapy and hospital care including early rehabilitation and mobilization, the length

Table 1 – Criteria for early discharge.

- STEMI treated with successful primary PCI within 12 h of the symptom onset (TIMI flow 3 in infarct-related artery)
- Age ≤75 years
- Left ventricular ejection fraction ≥45%
- One- or two-vessel disease
- No symptoms of residual ischaemia
- Haemodynamical and rhythmical stability
- Absence of comorbidities, requiring continuation of hospitalization
- Absence of contraindication for dual antiplatelet treatment or need for anticoagulation
- Supposed cooperation, adherence to medical measures and social background

TIMI, thrombolysis in myocardial infarction.

Table 2 – Baseline clinical characteristics of the analyzed cohort.

	$n = 25$
Age (years) ± SD	55 ± 11
Female	24%
Diabetes/prediabetes	12%/40%
Hypertension	56%
Smoking	56%
Hyperlipoproteinaemia	60%
History of atherothrombotic complication	4%