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Post-myocardial infarction rehabilitation and secondary prevention in hospitals

SHORT REPORT

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BACKGROUND

Norwegian studies have documented poor cardiovascular risk factor control and a high incidence of new cardiovascular events in myocardial infarction patients. There is little knowledge about the scope of secondary prevention treatment and cardiac rehabilitation in Norwegian hospitals. Therefore, we wanted to conduct a survey of discharge routines and outpatient follow-up after myocardial infarction.

MATERIAL AND METHOD

In October 2018, the heads of cardiology departments and nurse managers/physiotherapists at cardiology outpatient clinics at all Norwegian hospitals (N = 51) were contacted and asked to take part in a telephone interview.

RESULTS

A total of 40 doctors (78 %) and 51 nurses/physiotherapists (100 %) conducted the telephone interview. Eleven hospitals used standardised discharge summary templates with treatment targets and expected follow-up. Ten hospitals offered routine outpatient follow-up. A total of 47 hospitals (92 %) offered multidisciplinary cardiac rehabilitation, 'heart school' classes or cardiac exercise training, and of these 9 (18 %) offered multidisciplinary comprehensive cardiac rehabilitation in line with international recommendations.

INTERPRETATION

The survey revealed considerable differences in reported discharge routines and the provision of cardiac rehabilitation and outpatient follow-up at Norwegian hospitals.

Main findings

We found considerable variations in reported discharge routines and the scope of cardiac rehabilitation for patients after acute coronary heart disease.

Less than 20 % of Norwegian hospitals offered multidisciplinary comprehensive cardiac rehabilitation.

Around 12,000 people suffer myocardial infarction in Norway each year (1), a quarter of whom also had prior coronary artery disease (2). To prevent new events, it is recommended that established cardiovascular risk factors be monitored and treated (3). Data from Norway show that the majority of patients have poor risk factor control following myocardial infarction (2, 4). The causes are complex and may be related to the individual patient and follow-up by the health service (3). There is the potential to optimise the treatment of risk factors and to improve hospital discharge summaries with treatment targets and follow-up plans (4).

There is solid evidence that participation in multidisciplinary cardiac rehabilitation is associated with improved quality of life and reduced morbidity and mortality, even since the introduction of percutaneous coronary intervention (PCI) and modern drugs for secondary prevention (3, 5). European guidelines recommend that cardiac rehabilitation should be multidisciplinary and include exercise training, education, follow-up and management of lifestyle and risk factors, as well as psychosocial support (3). Multidisciplinary cardiac rehabilitation following myocardial infarction has the highest class of recommendation in the guidelines (class 1 A) (3). Despite this, few people in Norway are offered or participate in various forms of cardiac rehabilitation (6), and there are considerable differences between hospitals (7).

There is little knowledge about routines when discharging myocardial infarction patients or about secondary prevention follow-up and cardiac rehabilitation in Norway. The objective of the study was to gain an overview of the existing provision at hospitals in Norway.

Material and method

Between 1–14 October 2018, contact was made with heads of cardiology departments and nurse managers/physiotherapists in cardiology outpatient clinics at all 51 hospitals in Norway with a request to take part in a telephone interview with a detailed interview guide that we developed ourselves (Table 1). Hospital discharge routines, the content and scope of cardiac rehabilitation, and outpatient follow-up were surveyed.

Table 1

Survey of secondary prevention treatment and follow-up at Norwegian hospitals (N = 51). The responses are shown as a number (%)

Questions	No	Yes
Questions to heads of department (n = 40/51, 78 %)		
Does the department have written procedures for secondary prevention treatment and follow-up?	16 (40)	24 (60)
Do doctors use standardised discharge summary templates with treatment targets for risk factors and expected follow-up after discharge?	29 (73)	11 (28)
Does the department systematically refer myocardial infarction patients for cardiac rehabilitation?	7 (18)	33 (83)
Is routine monitoring arranged for myocardial infarction patients after discharge?[1]	30 (75)	10 (25)
Questions to nurse managers or physiotherapists (n = 51/51, 100 %)		
Does the hospital have cardiac rehabilitation or other systematic nurse or physiotherapist follow-up of myocardial infarction patients after discharge? If yes, describe the content, duration and frequency[2]	4 (8)	47 (92)
Multidisciplinary comprehensive cardiac rehabilitation	42 (82)	9 (18)
'Heart school' classes and exercise training	29 (57)	22 (43)
Only 'heart school' classes	37 (73)	14 (27)
Only exercise training	49 (96)	2 (4)

[1]Follow-up question: If yes, how long after discharge?

[2]The responses were categorised by the authors as shown below. See method section for details

The various provisions for cardiac rehabilitation were categorised based on European recommendations (3):

- Multidisciplinary comprehensive cardiac rehabilitation: provision in which individual conversations, exercise training and group education are integrated and multidisciplinary (doctors, nurses, physiotherapists and others). Duration 4–12 weeks, often offering extended exercise training.
- 'Heart school' classes: provision of teaching by various experts. Duration 1–4 days.
- Exercise training: provision of exercise training by the physiotherapy service. Duration 6–12 weeks.

Statistics and ethics

Descriptive statistics are used to describe the material with the number and percentage, average and distribution. The survey contains no personal data. It involves health service research and is thus outside the mandate of the Regional Committee for Medical and Health Research Ethics. Informants gave verbal consent to take part in the telephone interview, and it was emphasised that data would not be presented at a hospital level.

Results

A total of 40 out of the 51 heads of cardiology departments (78 %) and 51 nurses/physiotherapists (100 %) in cardiology outpatient clinics answered the telephone interview (Table 1). In some cases, we spoke to both nurses and physiotherapists. There were no discrepancies in the responses from the various professions. A total of 24 out of 40 hospitals (60 %) that responded had written procedures for secondary prevention treatment and follow-up (Table 1). A standardised discharge summary template with treatment targets and expected follow-up was available at 11 hospitals (28 %). Most stated that myocardial infarction patients were referred for cardiac rehabilitation, with 10 hospitals (25 %) arranging routine monitoring of myocardial infarction patients at outpatient clinics with doctors or nurses, after an average of 15 weeks (distribution 2–52 weeks).

47 hospitals (92 %) had outpatient provision for multidisciplinary cardiac rehabilitation, 'heart school' classes or exercise training (Table 1). A total of 36 hospitals (71 %) offered 'heart school' classes, lasting on average 2 days (distribution 1–4 days), 33 hospitals (65 %) offered exercise training by the physiotherapy service an average of 19 times (distribution 2–48 times). Multidisciplinary cardiac rehabilitation was offered at 9 hospitals (18 %) with an average duration of 11 times (distribution 5–18 times), 1–3 times per week.

Discussion

We found considerable variations between hospitals in discharge routines and the scope of cardiac rehabilitation for patients following myocardial infarction. A minority of hospitals used a standardised discharge summary template or arranged routine

outpatient monitoring of patients. Most hospitals offered some form of systematic follow-up, but only 9 out of the 51 hospitals provided multidisciplinary comprehensive cardiac rehabilitation as recommended in the European guidelines (3).

A lack of risk factor control and a high incidence of new cardiovascular events in myocardial infarction patients highlight the need for closer secondary prevention follow-up (2, 4). In addition to changes in several recommended treatment targets and the development of new secondary prevention drugs, individualised treatment based on the patient's own wishes, age, comorbidities and risk profile is recommended to a greater extent than before (3). It can be argued that hospitals should also take greater responsibility for the follow-up of secondary prophylaxis after discharge. However, our study found that, although there is a documented beneficial effect on medication adherence and lifestyle changes (8), only a few hospitals offered routine outpatient post-myocardial infarction follow-up. Furthermore, general practitioners, who are primarily responsible for follow-up, are looking for more detailed information about treatment and expected follow-up (4). The use of standardised discharge summary templates can be an important tool in ensuring good transfer of information between the treatment levels.

Cardiac rehabilitation is associated with very favourable clinical and health economics effects and reduces total mortality by 20–60 % after a median follow-up of 24 months (5). Although most of the hospitals in our study reported that patients were referred for cardiac rehabilitation, the participation rate among patients in the NORSTENT study who underwent cardiac rehabilitation after percutaneous coronary intervention was only 28 % (6). This considerable divergence may be explained by long travelling distances, lack of provision or capacity, inadequate referral routines or low patient motivation. Vestfold Hospital has systematically referred patients to cardiac rehabilitation, with a participation rate of 75 % as a result (7).

Systemic barriers such as a lack of referral routines and low availability of provision are probably the main causes of the low participation rate in Norway. Only 18 % of hospitals offered multidisciplinary cardiac rehabilitation in line with European recommendations (3), while 27 % had 'heart school' classes without exercise training and 8 % had no provision for follow-up. Therefore, there is a clear need to expand the provision of cardiac rehabilitation at Norwegian hospitals. There is a need for further research into referral routines, barriers to participation, the content and quality of the various cardiac rehabilitation services, as well as evaluation of digital rehabilitation programmes. A registry to evaluate and improve cardiac rehabilitation is recommended (3), although not currently set up in Norway. Sweden has this type of registry, making it possible to evaluate the effect of the quality and availability of cardiac rehabilitation on new cardiac events, quality of life and survival (9).

This study used an interview guide that we developed ourselves with many closed questions and little room for elaboration of answers. Therefore, it is possible that important information about secondary prevention follow-up was not disclosed. The questions were not validated or used in previous studies. We did not manage to make contact with 11 of the heads of department. The study was conducted in autumn 2018, and the routines may have changed since then, but there is little reason to think that there have been any major changes apart from COVID-19 measures.

Conclusion

Our survey revealed large variations in reported discharge routines and in the content and scope of cardiac rehabilitation and outpatient follow-up at Norwegian hospitals. The study may help focus on secondary prophylaxis and cardiac rehabilitation and assist in expanding and improving the quality of the provision offered.

The article has been peer-reviewed.

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