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General Hospital Psychiatry

Psychiatric–Medical Comorbidity

The Psychiatric–Medical Comorbidity section will focus on the prevalence and impact of psychiatric disorders in patients with chronic medical illness as well as the prevalence and impact of medical disorders in patients with chronic psychiatric illness.

Depression following myocardial infarction: first-ever versus ongoing and recurrent episodes

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Abstract

Background: Depression following myocardial infarction (MI) can be a first-ever episode for some, whereas for others, it may represent a recurrent episode or one that was present at the onset of the infarction. We investigated if there are differences in pre- and post-MI characteristics between these subtypes.

Methods: Four hundred sixty-eight patients admitted for an MI were assessed for the presence of an ICD-10 depressive disorder following MI. A comparison was made between first-ever and ongoing or recurrent depression on demographic and cardiac data, personality, and depression characteristics.

Results: Depressive disorder during the first post-MI year was present in 25.4% of the MI patients ($n=119$), and almost half were ongoing or recurrent ($n=53$, 44.5%). Recurrent and ongoing depression was related to high neuroticism ($Z=2.77$, $P<.01$), whereas first-ever depression was associated with MI severity (poor left ventricular ejection fraction: $Z=1.64$, $P=.05$; PTCA or CABG during hospitalization: $Z=1.88$, $P=.03$; arrhythmic events: $Z=1.49$, $P=.06$).

Conclusions: Our results suggest that in the first-ever post-MI depression cases, depression may be triggered by the severity of the MI, whereas ongoing and recurrent depression is more related to personality. Future research should address the question whether these subtypes of depression differ in cardiovascular prognosis and response to psychiatric treatment.

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Keywords: Depression; Myocardial infarction; First-ever episode

1. Introduction

Depression following myocardial infarction (MI) is a highly prevalent disorder with a negative effect on cardiac prognosis [1–6]. In about half of the cases, patients have experienced a depressive episode already before the onset of the MI [7–9]. From a clinical perspective, a distinction between two types of post-MI depression may be of interest: a post-MI depressive episode in patients who have never been depressed before (incident depression) versus a depression that was present at the time of the MI or already before (nonincident depression). Little is known about the etiology and characteristics of these two types, and as a result, it remains unknown to what extent post-MI depression should be considered a transient distress reaction to a life-threatening event or a resurfacing of a preexisting depressive vulnerability.

In two small studies, incident post-MI depression was compared to nonincident depression. Freedland et al. [8] found that 17 out of 39 post-MI depressed patients who had a history of depression (43.6%) had more severe depression and less severe coronary artery disease compared to those with an incident depression. Lloyd and Cawley [7] distinguished between 16 post-MI depressed patients who had a depressive history (45.7%) and 19 post-

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MI depressed patients without a depressive history (52.8%). Although the latter group of incident depression cases resembled a psychologically healthy control group, patients with a depression that existed already before the MI had significantly higher neuroticism scores. Moreover, the depressive symptoms of patients with an incident post-MI depression tended to be transient and improved without psychiatric treatment.

These findings may be explained from a perspective of stress and vulnerability. In psychologically healthy subjects, the stress resulting from a severe MI may be the main reason for them to develop a depressive episode. For subjects with a history of depression before the MI, however, a high level of neuroticism may be the reason, whereas the level of the trigger — the MI — may be of less importance. In order to clarify potential differences between these two groups, we set out to describe risk factors and characteristics of post-MI depression, comparing incident post-MI depressions and nonincident post-MI depressions. We hypothesized that incident depression was associated with a more severe MI, whereas nonincident depression was associated with neuroticism.

2. Methods

2.1. Subjects and setting

The DepreMI study is an observational cohort study of patients with depressive symptoms and/or depressive disorder in patients who have been admitted for an MI. Between September 1997 and October 2000, all consecutive patients admitted at four hospitals in the North of the Netherlands, who met the criteria for an MI, were asked to participate in the study. To be diagnosed with an MI, patients had to meet at least two of three following criteria: (a) chest pain for at least 20 min, (b) creatinine phosphokinase value 100% higher of normal or creatinine phosphokinase MB value greater than 10%, (c) presence of new pathological Q waves on the electrocardiogram in at least two leads. The exclusion criteria were life expectancy of less than a year because off a noncardiac condition, too poor physical condition according to hospital staff, cognitive dysfunctions, not being able to speak or read Dutch, occurrence of an MI in patients admitted for another reason (except angina pectoris). All patients participating in the study signed an informed consent. The study protocol was approved by the Ethics Committee Review board at all participating hospitals.

2.2. Assessment of depression

The presence of a current or past depressive disorder was assessed in a face-to-face interview at 3 and 12 months post-MI, with a modified version of the Composite International Diagnostic Interview (CIDI-auto) [10]. The CIDI is a fully structured interview that examines whether the ICD-10 diagnostic criteria for depression are met. For depression, the interrater reliability has been demonstrated to be excellent and the test–retest reliability and validity good [11]. The CIDI is available in many languages. We used the Dutch version of the CIDI 2.1, which is supported by the Dutch CIDI centre that offered a training program for our interviewers. The data from the CIDI are entered into standard data entry and the computer algorithm provides the diagnostic criteria that are met. Four research assistants were trained to administer the interview at the patients' home. Diagnoses were assessed according to ICD-10 criteria. Modifications were made to specify time of onset, duration, and recurrence in relation to the index MI.

Depressive symptoms were assessed with the Beck depression inventory (BDI) [12] during hospital stay and at 3, 6, and 12 months post-MI. The BDI is a widely used 21-item, self-report measure of the presence and severity of depressive symptoms. Respondents were instructed to rate each symptom on a 0 to 3 scale, with "0" representing "absent" and "1–3" representing increasing levels of severity. The scores range from 0 to 63. A total score of 10 or higher is generally accepted as indicating the presence of depressive symptoms.

2.3. Demographic characteristics

Sociodemographic data were collected during hospitalization. Living alone and level of education were assessed in the face-to-face patient interview 3 months post-MI. Two levels of education were distinguished: (1) primary school as highest level of education and (2) secondary of higher education.

2.4. MI severity

Severity of the index MI was assessed by a history of MI, site of the index MI (anterior vs. otherwise), revascularization (PTCA or CABG), heart failure as indicated by Killip class at admission (i.e., a standardized four-point clinical assessment of the degree of heart failure, based on pulmonary rales and X-ray; divided as $\geq$class II or not), the occurrence of an arrhythmic event during hospitalization (either atrial fibrillation, ventricular fibrillation, or ventricular tachycardia more than 48 h post-MI, or cardioversion for ventricular fibrillation or ventricular tachycardia within 48 h post-MI), and left ventricular ejection fraction (LVEF; assessed by either a nuclear method, echocardiography, magnetic resonance imaging, or angiography). Because of the various ways of assessing the LVEF, we dichotomized it at $\geq$40% or <40%. For the 70% of patients of whom LVEF was available as a continuous variable, we used the continuous score in a sensitivity analysis.

2.5. Neuroticism and extraversion

Subjects filled in the neuroticism and extraversion subscales of the Eysenck Personality Questionnaire [13], consisting of 12 items for each subscale as part of the face-

to-face interview at 3 months post-MI. The traits neuroticism and extraversion were chosen as they are two of the big five personality factors that seem most related to type D personality, which has attracted most attention in this area of research.

2.6. Onset, duration, symptoms, severity, and treatment status of post-MI depression

2.6.1. Onset and duration

The two CIDI interviews provided information on the onset, duration, and recurrence of the post-MI depressive disorder. Onset and recency were assessed as either more than 1-year pre-MI, within a year pre-MI, or in days post-MI. The CIDI interview was extended to determine the exact onset and end of each post-MI depressive episode. In case of more than one episode in the post-MI year, the duration of all episodes was summed up.

2.6.2. Symptoms

Depressive symptomatology was based on the CIDI in which the presence of core and the additional symptoms of the ICD-10 system were registered.

2.6.3. Severity

Severity of depressive symptoms was assessed with the highest BDI score during the post-MI year.

2.6.4. Treatment status

In the CIDI, we asked whether the patient had discussed psychological problems with a healthcare worker, whether they were treated for these symptoms, and whether antidepressant medication was prescribed.

2.7. Analysis

Patients with post-MI depressive disorder were compared to patients with no post-MI depression on demographic characteristics (age, gender, level of education, living alone, smoking), cardiological characteristics (previous MI, site of MI, revascularization, heart failure, and arrhythmia), and personality (neuroticism and extraversion). For categorical data, χ^2 tests were used. For the continuous variables, t tests were used.

Based on the CIDI, two groups of patients were identified: patients with a post-MI depressive episode who had never been depressed before the index MI (incident post-MI depressions) and patients who had been depressed before the index MI (nonincident post-MI depression, including patients with ongoing episodes and patients with recurrent depressive episodes). The two subtypes of post-MI depression cases were compared on demographic, cardiological, and personality characteristics and on characteristics of the post-MI depression (duration, symptomatology, severity, and treatment status).

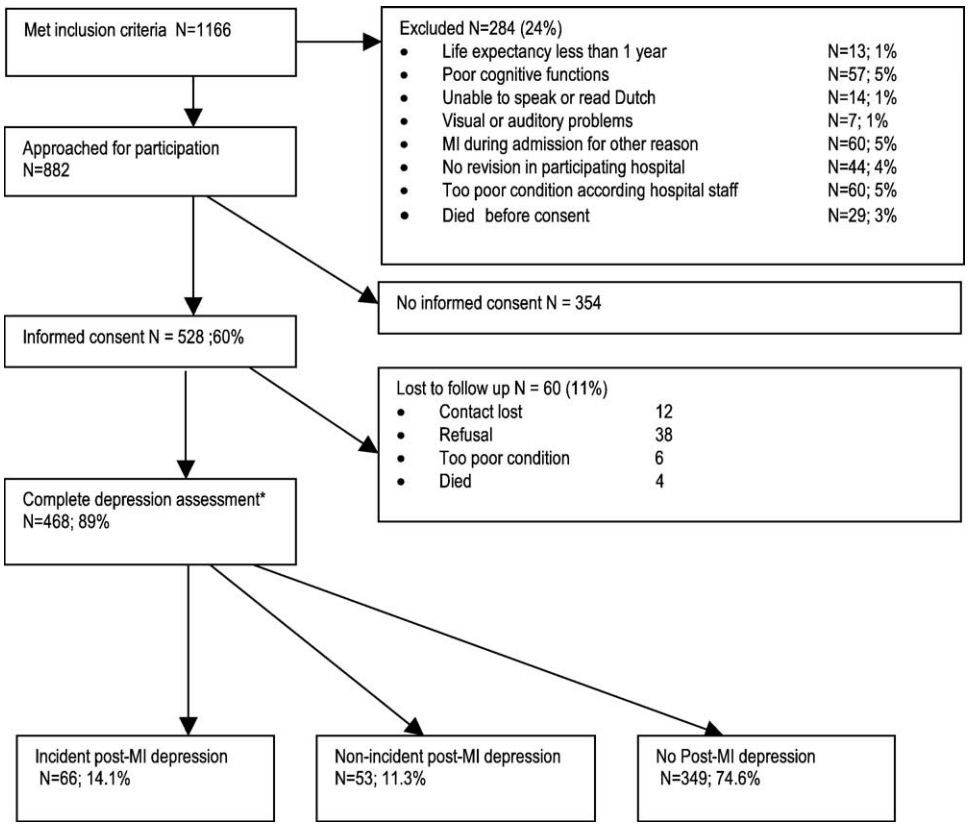

Fig. 1. Flowchart DepreMI study. *Of the 528 patients, 487 had a first CIDI of whom 468 also had a second interview. These 468 subjects were used for the analyses. BDI assessments during hospitalization and at 3, 6, and 12 months post-MI were available for $n=468$, $n=464$, $n=454$, and $n=456$.

Table 1
Comparison of post-MI depressed subjects to non-post-MI depressed patients

	Post-MI depression, $n=119$	No. of post-MI depression, $n=349$	P
Sociodemographic data			
Female sex (%)	27.8	17.9	.03
Age at the time of MI (mean, S.D.)	58.6 (11.5)	61.2 (11.7)	.04
Living alone (%)	15.7	13.4	.55
Primary school as highest level of education (%)	20.4	19.2	.79
Smoking at admission (%)	62.4	46.6	<.01
Baseline cardiological data			
Anterior site of MI (%)	32.4	32.3	.98
LVEF<40% (%)	22.2	24.0	.70
LVEF (mean, S.D.)[a]	48.1 (13.3)	47.0 (12.9)	.53
Killip class≥2 (%)	14.8	14.1	.85
Arrhythmic event during admission	13.0	8.3	.16
Revascularization during admission (%)	31.5	23.3	.09
Psychometric data			
Neuroticism (mean, S.D.)	6.2 (3.4)	2.5 (2.7)	<.01
Extraversion (mean, S.D.)	6.0 (2.8)	6.4 (2.7)	.20

[a] Available for 337 patients.

By means of logistic regression analysis, we tested which of the significant predictors that were found in the previous analyses (post-MI depression versus no post-MI depression, and incident vs. nonincident) predicted incident post-MI depression and nonincident post-MI depression, respectively, compared to patients with no post-MI depression.

In order to test the hypothesis of differences between the subtypes of post-MI depression, we compared the magnitude of the odds ratios of neuroticism and indicators of MI severity (LVEF, revascularization, and arrhythmic events) between the two subgroups using their confidence intervals (CIs) [14]. For these hypothesis-driven tests, we used one-sided P values. For all other tests, two-sided P values were used.

3. Results

Eleven hundred sixty-six patients met the inclusion criteria for this study. Of these, 284 (24%) were excluded (see Fig. 1). Eight hundred eighty-two patients were found eligible and were approached for participation in the study. Five hundred twenty-eight patients (60%) gave informed consent. Four hundred eighty-seven patients were interviewed at 3 months of whom 468 patients also participated at 12 months post-MI (Fig. 1).

Based on the CIDI, 327 (69.9%) subjects did not experience a depressive episode, 22 (4.7%) had a depression before the MI but not after, 66 had a post-MI depression but not pre-MI depression, and 53 (11.3%) had a depression both before and after the MI. Thus, total of 119 (25.4%) MI patients met the ICD-10 criteria for depressive disorder during the post-MI year. Of the post-MI depressed patients, 99 (83.2%) had an onset within the first 3 months post-MI, whereas another 20 (16.8%) had an onset later than 3 months post-MI. A considerable proportion reported an at least one additional lifetime anxiety disorder: 63 (52.9%). The prevalence of the specific anxiety disorders (without hierarchical exclusion rules applied) were as follows: generalized anxiety disorder, 44 (37.0%); social phobia, 16 (13.4%); agoraphobia (with or without panic), 29 (24.3%); specific phobia, 21 (17.6%); panic disorder, 15 (12.6%); other anxiety disorder, 16 (13.4%). In addition, 27 (22.7%) of the depressed patients suffered from dysthymia. The characteristics of depressed and nondepressed patients are described in Tables 1 and 2. Post-MI depression was associated with female sex, lower age, smoking, higher neuroticism, but not with cardiological data.

Based on the BDIs assessed during hospitalization and at 3, 6, and 12 months follow-up, the following proportions of patients had significant depressive symptoms (BDI≥10): 22.6% ($n=468$), 24.4% ($n=464$), 24.6% ($n=454$), and 24.1% ($n=456$). Of the post-MI depressed patients, almost half were nonincident cases ($n=53$, 44.5%). Of the nonincident cases, 29 were considered as ongoing depression and 24 as recurrent. In Table 3, it is shown that except for duration of post-MI depression, these subgroups were comparable. The difference in depression during the 12 months post-MI is rather unsurprising because the ongoing depressions started earlier whereas follow-up terminated at 12 months. Ongoing and recurrent depression cases were, therefore, joined and referred to as "nonincident" depression cases.

In Table 4, a comparison between incident and nonincident post-MI depression is shown.

Table 2
ICD-10 Diagnoses of the post-MI depressed subjects ($n=119$)

ICD-10 diagnosis	n (%)
Mild depressive episode without somatic syndrome (F32.00)	35 (29.4)
Mild depressive episode with somatic syndrome (F32.01)	1 (0.8)
Recurrent depressive episode — mild — without somatic syndrome (F33.00)	12 (10.1)
Moderate depressive episode without somatic syndrome (F32.10)	38 (31.9)
Moderate depressive episode with somatic syndrome (F32.11)	7 (5.9)
Recurrent depressive episode — moderate — without somatic syndrome (F33.10)	8 (6.7)
Severe depressive episode without psychotic symptoms (F32.2)	11 (9.2)
Recurrent depressive episode — severe — with somatic syndrome (F33.11)	2 (1.7)
Recurrent depressive episode — severe — without psychotic symptoms (F33.2)	5 (4.2)

Table 3
Comparison of recurrent versus ongoing post-MI depression

	Recurrent, $n=24$	Ongoing, $n=29$	P
Sociodemographic data			
Female sex (%)	37.5	20.7	.15
Age at the time of index MI (mean, S.D.)	57.5 (10.5)	57.6 (10.5)	.97
Living alone (%)	20.8	6.9	.14
Primary school as highest level of education (%)	45.8	20.7	.15
Smoking at admission (%)	66.7	64.3	.55
Baseline cardiological data			
Anterior site of MI (%)	25.0	31.0	.43
LVEF < 40% (%)	8.3	20.7	.20
LVEF (mean, S.D.)*	50.8 (7.6)	51.6 (15.1)	.20
Killip class ≥ 2 (%)	8.3	17.2	.30
Arrhythmic event during index admission (%)	4.2	10.3	.38
Revascularization during admission (%)	9.5	30.8	.08
Psychometric data			
Neuroticism (mean, S.D.)	6.4 (2.2)	7.9 (2.8)	.08
Extraversion (mean, S.D.)	5.8 (2.8)	5.3 (2.5)	.53
Post-MI depression symptomatology			
Depressed mood (%)	85.7	84.6	.92
Changes in appetite (%)	76.2	96.2	.04
Changes in sleeping pattern (%)	95.2	92.3	.68
Fatigue (%)	100	100	1.00
Slowness or listlessness (%)	85.7	65.4	.11
Loss of interest (%)	95.2	100	.26
Loss of self-esteem (%)	42.9	46.2	.82
Loss of confidence (%)	61.9	73.1	.41
Cognitive problems (%)	90.5	88.5	.82
Ideation of death (%)	57.1	65.4	.56
Course and severity of depression			
Duration of depression in days post-MI (mean, S.D.)	120.1 (85.0)	218.1 (105.8)	<.001
Maximum BDI score (mean, S.D.)	16.5 (9.0)	17.8 (8.8)	.60
Treatment status of post-MI depression			
Symptoms discussed with healthcare worker (%)	66.7	62.1	.48
Treatment for psychological symptoms (%)	25.0	41.4	.17
Seen by a psychiatrist or psychologist (%)	4.2	20.7	.08
Antidepressants prescribed (%)	12.5	17.2	.47

Patients with a nonincident post-MI depression significantly more often had primary school as highest education and they had higher neuroticism scores. Patients with an incident post-MI depression more often underwent revascularization during hospitalization and tended to have poorer LVEF and more arrhythmic events. We found no significant differences between incident and nonincident depression on enzyme values, although there seemed to be a tendency for incident depression cases to have higher enzyme values (incident: median CPK-max=835, median CPK-MB max=71; nonincident: CPK−max=695; median CPK-MB max=63; P CPK=0.91; P CPK-MB=0.58). No differences in depression characteristics between the groups were found, except for a higher prevalence of appetite problems in the nonincident post-MI depressions.

In multivariate analyses, some overlapping but also differing risk factors emerged for incident depres-

Table 4
Comparison of incident versus nonincident post-MI depression

	Incident post-MI depression, $n=66$	Nonincident post-MI depression, $n=53$	P
Sociodemographic data			
Female sex (%)	28.8	28.3	.95
Age at the time of index MI (mean, S.D.)	59.6 (12.2)	57.5 (10.4)	.33
Living alone (%)	22.7	13.2	.18
Primary school as highest level of education (%)	10.6	32.1	<.01
Smoking at admission (%)	61.0	65.4	.63
Baseline cardiological data			
Anterior site of MI (%)	36.4	28.3	.35
LVEF<40% (%)	28.8	15.1	.08
LVEF (mean, S.D.)[a]	45.3 (14.0)	51.2 (11.9)	.05
Killip class ≥ 2 (%)	18.2	13.2	.46
Arrhythmic event during index admission (%)	18.2	7.5	.09
Revascularization during admission (%)	40.0	21.3	.04
Psychometric data			
Neuroticism (mean, S.D.)	5.3 (3.5)	7.4 (2.7)	<.01
Extraversion (mean, S.D.)	6.4 (2.6)	5.5 (3.0)	.17
Post-MI depression symptomatology			
Depressed mood (%)	70.0	85.0	.07
Changes in appetite (%)	65.0	87.2	<.01
Changes in sleeping pattern (%)	96.7	93.6	.46
Fatigue (%)	96.7	100	.21
Slowness or listlessness (%)	66.7	74.5	.38
Loss of interest (%)	96.7	97.9	.71
Loss of self-esteem (%)	33.3	44.7	.23
Loss of confidence (%)	63.3	68.1	.61
Cognitive problems (%)	80.0	89.4	.19
Ideation of death (%)	55.0	61.7	.49
Course and severity of depression			
Duration of depression in days post-MI (mean, S.D.)	146.9 (109.6)	174.3 (108.0)	.20
Maximum BDI score (mean, S.D.)	15.8 (6.7)	17.2 (8.8)	.33
Treatment status of post-MI depression			
Symptoms discussed with healthcare worker (%)	77.3	64.2	.12
Treatment for psychological symptoms (%)	34.0	24.2	.24
Seen by a psychiatrist or psychologist (%)	13.6	13.2	.95
Antidepressants prescribed (%)	15.1	9.1	.31

[a] Available for 82 patients.

Table 5
Multivariate predictors of incident and nonincident post-MI depression compared to patients with no post-MI depression

	Incident depression		Nonincident depression	
Predictors	Unadj. OR (95% CI)	Adj. OR (95% CI)	Unadj. OR (95% CI)	Adj. OR (95% CI)
Female sex	2.03 (1.11–3.71)	3.32 (1.48–7.42)	1.98 (1.02–3.84)	1.80 (0.64–5.06)
Age	0.99 (0.97–1.01)	0.97 (0.93–1.00)	0.97 (0.95–1.00)	0.95 (0.91–0.99)
Smoking	1.66 (0.94–2.93)	1.22 (0.59–2.52)	2.00 (1.08–3.69)	0.63 (0.24–1.63)
Primary school as highest level of education	0.52 (0.23–1.19)	0.67 (0.24–1.87)	2.06 (1.09–3.90)	1.90 (0.69–5.20)
Neuroticism	1.31 (1.20–1.43)	1.33 (1.19–1.48)	1.62 (1.43–1.83)	1.66 (1.43–1.93)
Revascularization	2.20 (1.23–3.93)	2.32 (1.13–4.76)	0.89 (0.42–1.88)	0.76 (0.29–2.01)

sion (female gender, revascularization during hospitalization, age, neuroticism) than for nonincident depression (age, neuroticism, smoking, primary school as highest education) (Table 5).

We tested whether the associations of neuroticism and indicators of MI severity (revascularization during hospitalization, LVEF, arrhythmic events during hospitalization) were comparable for the two subgroups by means of χ^2 analysis comparing logarithms of the odds ratios. Neuroticism was significantly stronger correlated with nonincident post-MI depression (OR, 1.62; 95% CI, 1.43–1.83) than with incident depression (OR, 1.31; 95% CI, 1.20–1.43) ($Z=-2.77$, $P<.01$). Revascularization during hospitalization on the other hand was stronger associated with incident post-MI depression (OR, 2.20; 95% CI, 1.23–3.92) than with nonincident post-MI depression (OR, 0.89; 95% CI, 0.42–1.88) ($Z=1.88$, $P=.03$). Poor LVEF was stronger associated with incident post-MI depression (OR, 1.27; 95% CI, 0.71–2.28) than with nonincident post-MI depression (OR, 0.56; 95% CI, 0.25–1.23) ($Z=1.64$, $P=.05$). The occurrence of arrhythmic evens during hospitalization tended to be stronger associated with incident post-MI depression (OR, 2.55; 95% CI, 1.22–5.31) than with nonincident post-MI depression (OR, 0.94; 95% CI, 0.32–2.78) ($Z=1.49$, $P=.06$).

4. Discussion

About a quarter (25.4%) of MI patients in our sample suffered from depression during the year after MI. Among the most frequently reported symptoms were fatigue, changes in sleeping pattern, and loss of interest, whereas the least frequently reported symptoms were loss of self-esteem and ideation of death. Our findings do not support the view of post-MI depression as a transient reaction to a stressful event: post-MI depressed patients on average suffered from depression for about half a year during the post-MI year (157 days).

In a larger sample of patients, we were able to confirm the results of two previously conducted smaller studies [7,8] that almost half of the post-MI depressed patients had a nonincident depression — a depressive episode that was present already at the time of the MI or before (44.5%). Like other authors, we found differences between patients with an incident post-MI depression and patients with a nonincident depression [8]. Incident depression had stronger relations with LVEF and revascularization during hospitalization, whereas nonincident post-MI depressions were stronger related to neuroticism. These findings provide preliminary support for a distinction between two etiological types, in which incident depression is triggered mainly by a severe infarction or its consequences (such as pain or disability) in persons with normal vulnerability, whereas the nonincident depression appears a continuation or an MI-triggered exacerbation of a vulnerability that was already present before the MI.

Our findings are compatible with a study by Ormel et al. [15] reporting that neuroticism plays a larger role in recurrent depressive episodes than in incident episodes. They found an etiological discontinuity between first and recurrent depressive episodes in late life; subjects with recurrent episodes showed a higher sensitivity to stressful events resulting in the observation that in this group, even mild stressful life events can lead to a new depressive episode.

Among the limitations of the study, the considerable proportion of excluded patients during the phases of the study should be considered. The number of patients that did not give informed consent, had incomplete assessments, or were lost to follow-up may have resulted in an underrepresentation of patients with post-MI depression. In order to see if our study was still representative for the population, we compared our data with results reported in previous studies. Generally, an estimated prevalence of 15–25% of post-MI depression is reported, so our finding of 25.4% (119/468) seems in line. We, therefore, do not expect that major bias has been introduced.

Treatment status of post-MI depression was poor in both types and tends to be even poorer for nonincident depression. This, in itself, is a remarkable finding, because these patients may have had more opportunity to report their complaints. Although the majority of patients with a post-MI depressive disorder discussed psychological symptoms with a healthcare worker, only a quarter to a third was actually treated (incident depression, 34%; nonincident depression, 24%). This is comparable to recent findings reported for the treatment status of depression in the general population (21.2% treated) [16]. Recently, the ENRICHD trial has demonstrated that active psychiatric treatment of post-MI is effective in reducing depressive symptoms [17]. In that study, it was also reported that many post-MI

depressed patients in the care as-usual arm also remitted. A suggestion that especially patients with a nonincident post-MI depression may respond to psychiatric treatment was recently offered in a sample of patients who suffered from acute coronary syndrome (MI or unstable angina) and were treated with sertraline or placebo [18]. Although, overall, no effects on health-related quality of life were found, in the subgroup of patients who experienced at least two prior depressive episodes (about 30%), significant effects favoring sertraline were observed.

Post-MI depressive symptoms and disorders have a negative influence on cardiac prognosis [1–6] and on quality of life [19,20]. The current study shows that two subgroups of post-MI depression may exist that differ in pre-MI characteristics and MI severity. Future research should address the question whether these subgroups also differ in response to psychiatric treatment and cardiovascular prognosis.

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