

University of Groningen

The importance of incident depression in myocardial infarction patients

de Jonge, P.

Published in:
 Biological Psychiatry

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
 Publisher's PDF, also known as Version of record

Publication date:
 2009

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

de Jonge, P. (2009). The importance of incident depression in myocardial infarction patients. *Biological Psychiatry*, 65(4), e7-e8.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

The Importance of Incident Depression in Myocardial Infarction Patients

To the Editor:

Depression that is present in the aftermath of a myocardial infarction (MI), post-MI depression, may encompass different subtypes based on whether it is the first or a recurrent episode and based on its onset (i.e., started before or after the MI). Incident post-MI depression is defined as a first-ever episode with an onset after the MI. In a recent issue of *Biological Psychiatry*, Parker *et al.* (1) confirm that the association between post-MI depression and prospective cardiovascular events is due to those episodes that develop just after the cardiac event.

Although some still believe the results in this area of research are inconclusive (2), summarizing the evidence reveals there is only one relatively small study ($n = 222$) from 1996 by Lesperance *et al.* (3) suggesting that recurrent depression is associated with an increased risk of cardiac events. In contrast, there are four larger and more recent studies, namely by Grace *et al.* (4) ($n = 750$), de Jonge *et al.* (5) ($n = 468$), Dickens *et al.* (6) ($n = 588$), and recently the study by Parker *et al.* (1) ($n = 489$), suggesting that it is incident depression that is most strongly associated with prospective cardiovascular events. Apart from the larger sample sizes of these more recent studies, it is important to note that the estimated increased risk of post-MI depression on survival has dramatically decreased from the early studies by Frasure-Smith *et al.* (7) (hazard ratio [HR] = 5.8, unadjusted effect) to more recent, meta-analytic based estimations of around 2 (van Melle *et al.* [8]: HR = 2.4; Nicholson *et al.* [9]: HR = 1.8; Barth *et al.* [10]: HR = 2.2). As a result, the earlier studies may no longer accurately reflect the actual risk.

Some recent studies have also shown that incident depression is associated with aspects of MI severity (11) and coronary artery disease (CAD) severity (12), suggesting a different etiology than recurrent depression. This is not to say that post-MI depression is necessarily an artifact, although in part it may be, but at least that it may be a specific kind of reaction that is different from normal depression. Among the possible mechanisms of how post-MI depression may lead to impaired cardiovascular prognosis, the role of inflammation and low heart rate variability have been proposed (13). Both are associated with the severity of the underlying heart disease, depression, and cardiovascular prognosis. Of interest, both increased inflammation (14) and decreased heart rate variability (15) are specifically associated with somatic, rather than cognitive, symptoms of depression, which may be more prevalent in incident depression. In other words, incident post-MI depression may be a condition in which depression and heart disease are truly intertwined.

The finding that incident post-MI depression, relative to recurrent depression, is distinctively associated with subsequent negative cardiac outcomes is of utmost interest with respect to treatment options. The presence of incident post-MI depression may help to explain the disappointing results from intervention trials aimed to treat post-MI depression and thereby attempting to improve cardiovascular prognosis (16–18). Thus far, the distinction between incident depression and recurrent depression has been found helpful in distinguishing response to treatment in non-CAD depressed patients (19–21), in which only subjects who had repeated past episodes responded to therapy. With the results presented by Parker *et al.* (1), it is possible that in MI patients, we are currently able to effectively treat depression that is not associated with an increased risk of cardiovascular events but not depression that is associated with increased risk, as

observed in the Sertraline AntiDepressant Heart Attack Trial (SADHART) (16). The result is a failure to improve cardiovascular prognosis by treating post-MI depression as observed in the Enhancing Recovery in Coronary Heart Disease Patients, or ENRICHED, trial (17), and the Myocardial Infarction and Depression Intervention Trial, or MIND-IT (18). The presence of incident post-MI depression therefore urges us to keep our eyes open to new developments in this rapidly expanding area of research and to develop new interventions that might be quite different than what has been tried before.

Peter de Jonge

Interdisciplinary Center of Psychiatric Epidemiology
Department of Psychiatry
University Medical Centre Groningen
University of Groningen
Hanzeplein 1 Gebouw 32
PO Box 30 001
9700 RB Groningen
The Netherlands

Dr. de Jonge reports no biomedical financial interests or potential conflicts of interest.

1. Parker GB, Hilton TM, Walsh WF, Owen CA, Heruc GA, Olley A, *et al.* (2008): Timing is everything: The onset of depression and acute coronary syndrome outcome [published online ahead of print July 2]. *Biol Psychiatry*.
2. De Jonge P, Ormel J (2008): Heterogeneity of patients with coronary artery disease and distress and the need to identify relevant subtypes. *Arch Gen Psychiatry* 65:851–852; author reply 852–853.
3. Lesperance F, Frasure-Smith N, Talajic M (1996): Major depression before and after myocardial infarction: Its nature and consequences. *Psychosom Med* 58:99–110.
4. Grace SL, Abbey SE, Kapral MK, Fang J, Nolan RP, Stewart DE (2005): Effect of depression on five-year mortality after an acute coronary syndrome. *Am J Cardiol* 96:1179–1185.
5. de Jonge P, van den Brink RH, Spijkerman TA, Ormel J (2006): Only incident depressive episodes after myocardial infarction are associated with new cardiovascular events. *J Am Coll Cardiol* 48:2204–2208.
6. Dickens C, McGowan L, Percival C, Tomenson B, Cotter L, Heagerty A, Creed F (2008): New onset depression following myocardial infarction predicts cardiac mortality. *Psychosom Med* 70:450–455.
7. Frasure-Smith N, Lesperance F, Talajic M (1993): Depression following myocardial infarction. Impact on 6-month survival. *JAMA* 270:1819–1825.
8. van Melle JP, de Jonge P, Spijkerman TA, Tijssen JG, Ormel J, van Veldhuisen DJ, *et al.* (2004): Prognostic association of depression following myocardial infarction with mortality and cardiovascular events: A meta-analysis. *Psychosom Med* 66:814–822.
9. Nicholson A, Kuper H, Hemingway H (2006): Depression as an aetiological and prognostic factor in coronary heart disease: A meta-analysis of 6362 events among 146 538 participants in 54 observational studies. *Eur Heart J* 27:2763–2774.
10. Barth J, Schumacher M, Herrmann-Lingen C (2004): Depression as a risk factor for mortality in patients with coronary heart disease: A meta-analysis. *Psychosom Med* 66:802–813.
11. Spijkerman T, de Jonge P, van den Brink RH, Jansen JH, May JF, Crijns HJ, Ormel J (2005): Depression following myocardial infarction: First-ever versus ongoing and recurrent episodes. *Gen Hosp Psychiatry* 27:411–417.
12. Goodman J, Shimbo D, Haas DC, Davidson KW, Rieckmann N (2008): Incident and recurrent major depressive disorder and coronary artery disease severity in acute coronary syndrome patients. *J Psychiatr Res* 42:670–675.
13. Carney RM, Freedland KE, Miller GE, Jaffe AS (2002): Depression as a risk factor for cardiac mortality and morbidity: A review of potential mechanisms. *J Psychosom Res* 53:897–902.

14. Dantzer R, O'Connor JC, Freund GG, Johnson RW, Kelley KW (2008): From inflammation to sickness and depression: When the immune system subjugates the brain. *Nat Rev Neurosci* 9:46–56.
15. de Jonge P, Mangano D, Whooley MA (2007): Differential association of cognitive and somatic depressive symptoms with heart rate variability in patients with stable coronary heart disease: Findings from the Heart and Soul Study. *Psychosom Med* 69:735–739.
16. Glassman AH, Bigger JT, Gaffney M, Shapiro PA, Swenson JR (2006): Onset of major depression associated with acute coronary syndromes: Relationship of onset, major depressive disorder history, and episode severity to sertraline benefit. *Arch Gen Psychiatry* 63:283–288.
17. Berkman LF, Blumenthal J, Burg M, Carney RM, Catellier D, Cowan MJ, et al. (2003): Effects of treating depression and low perceived social support on clinical events after myocardial infarction: The Enhancing Recovery in Coronary Heart Disease Patients (ENRICH) randomized trial. *JAMA* 289:3106–3116.
18. van Melle JP, de Jonge P, Honig A, Schene AH, Kuyper AM, Crijns HJ, et al. (2007): Effects of antidepressant treatment following myocardial infarction. *Br J Psychiatry* 190:460–466.
19. Teasdale JD, Segal ZV, Williams JMG, Ridgeway VA, Soulsby JM, Lau MA (2000): Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *J Consult Clin Psychol* 68:615–623.
20. Ma SH, Teasdale J (2004): Mindfulness-based cognitive therapy for depression: Replication and exploration of differential relapse prevention effects. *J Consult Clin Psychol* 72:31–40.
21. Bockting CLH, Schene AH, Spinhoven Ph, Koeter MWJ, Wouters LF, Huyser J, Kamphuis JH (2005): Preventing relapse/recurrence in recurrent depression with cognitive therapy: A randomized controlled trial. *J Consult Clin Psychol* 73:647–657.

doi:10.1016/j.biopsych.2008.08.024