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Determinants and escitalopram treatment effects on suicidal ideation in patients with acute coronary syndrome: Findings from the K-DEPACS and EsDEPACS studies☆

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ABSTRACT

Background: This study is aimed to investigate the determinants of suicidal ideation as well as to assess escitalopram treatment effects on suicidal ideation in patients with acute coronary syndrome (ACS).
Methods: A total of 1152 patients were consecutively recruited at baseline, 2 to 14 weeks after a confirmed ACS episode. Of 446 baseline participants with comorbid depressive disorders, 300 were randomized to a 24-week double-blind trial of escitalopram or placebo treatment. Suicidal ideation was determined using the "suicidal thoughts" item of the Montgomery and Asberg Depression Rating Scale. Socio-demographic and clinical characteristics, including depressive and anxiety symptoms, cardiovascular risk factors, and current cardiac status, were assessed.
Results: Suicidal ideation was independently associated with past history of depression, depressive and anxiety disorders, and higher troponin I levels. Escitalopram treatment was significantly more efficacious in reducing and treating suicidal ideation than placebo treatment over a 24-week period. These effects were largely explained by remission status of depressive and anxiety disorders.
Conclusions: Suicidal ideation is associated with unfavorable psychiatric and ACS status during the acute phase of ACS. Successful treatment of depression and anxiety with escitalopram had significant beneficial effects on suicidal ideation in these patients.

1. Introduction

Suicide is a major public health concern worldwide; almost 1 million individuals die of suicide every year [1]. The spectrum of suicidal behavior ranges from suicidal ideation and attempts to completion [2]. Moreover, suicide is strongly associated with mental disorders [3]. Acute coronary syndrome (ACS) is a serious life stressor that results in a high risk of developing psychological problems, which contribute to the risk of suicidal behavior, particularly depression and anxiety [4–5]. Epidemiological studies have found increased risks of suicide attempts [6] and completion [7,8] in ACS patients compared with the general population. Clinical studies that use suicidal ideation as a phenotype and focus on its socio-demographic and psychiatric correlates have demonstrated an association between depression, anxiety, personal psychiatric history, and single, widowed, and divorced marital statuses [9,10]. However, limitations of these previous clinical studies include small sample sizes (N = 70–103), limited measurements, and heterogeneous evaluation time points following ACS [9,10].

Since suicidal ideation is a prerequisite of more severe suicidal behavior and is highly prevalent in ACS patients, treatment of suicidal ideation is an important research issue in ACS patients. However, to the best of our knowledge, no study investigating this subject has previously been conducted. Treatment of depression or anxiety can be considered as treatment of suicidal ideation, as these psychological problems are closely related to suicidal ideation and its modifiable symptoms. In patients with depression or anxiety, several drugs,

Abbreviations: ACS, acute coronary syndrome; ANCOVA, analysis of covariance; BDI, Beck Depression Inventory; BMI, body mass index; CI, confidence interval; CK-MB, creatine kinase-MB; DSM-IV, Diagnostic and Statistical Manual of Mental disorders, 4th Edition; EKG, Electrocardiography; EsDEPACS, Escitalopram for DEPression in Acute Coronary Syndrome study; HADS-A, Hospital Anxiety and Depression Scale-anxiety subscale; HAMD, Hamilton Depression Rating Scale; HR, Hazards ratios; K-DEPACS, Korean DEPression in Acute Coronary Syndrome study; LVEF, Left ventricular ejection fraction; MADRS-ST, suicidal thoughts item of the Montgomery–Åsberg Depression Rating Scale; MINI, Mini-International Neuropsychiatric Interview; NNT, numbers needed to treat.

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including escitalopram and ketamine, are reported to be effective in reducing suicidal ideation [11–13]. Moreover, several antidepressant trials have reported successful treatment of depression in ACS patients [14–17]; however, none to date have evaluated suicidal ideation as a treatment outcome.

To address these gaps in the literature, we analyzed data from a naturalistic and interventional study of ACS patients to investigate determinants of suicidal ideation comprehensively in a large sample, as well as to assess the effect of escitalopram treatment of depression on suicidal ideation using a placebo-controlled design.

2. Methods

2.1. Study overview and participants

The present analyses were performed using data from a larger naturalistic study of ACS patients, the Korean DEPression in ACS (K-DEPACS) study, which also included a nested randomized control trial for depressive patients with ACS, the Escitalopram for DEPression in ACS (EsDEPACS) study. The overall study design and rationale have been published previously [18]. The study outline for the present analyses is presented in Fig. 1. Of 4809 consecutively recruited patients recently hospitalized with ACS at the Department of Cardiology of Chonnam National University Hospital, Gwangju, South Korea in 2006, 1152 patients who met the eligibility criteria (see online supplement) and agreed to participate were selected for the K-DEPACS study. They were assessed for a depressive disorder using the Mini-International Neuropsychiatric Interview (MINI) [19], a structured diagnostic interview for Diagnostic and Statistical Manual (DSM)-IV psychiatric disorders [20], as inpatients within 2 weeks after ACS and thereafter as outpatients every 4 weeks, up to 12 weeks. Of 446 individuals diagnosed with depressive disorder in this sample, 300 agreed to be randomized the EsDEPACS study (ClinicalTrial.gov registry number: NCT00419471), a 24-week, double-blind, placebo-controlled trial of escitalopram efficacy and safety. The first patient was enrolled in May 2007 and the last patient completed the follow-up evaluation in March 2013. Flexible doses of escitalopram (5, 10, 15, or 20 mg) or matched placebo were administered, which were determined according to the investigators' clinical decisions, considering patients response and tolerability. Examinations were scheduled at baseline, and at

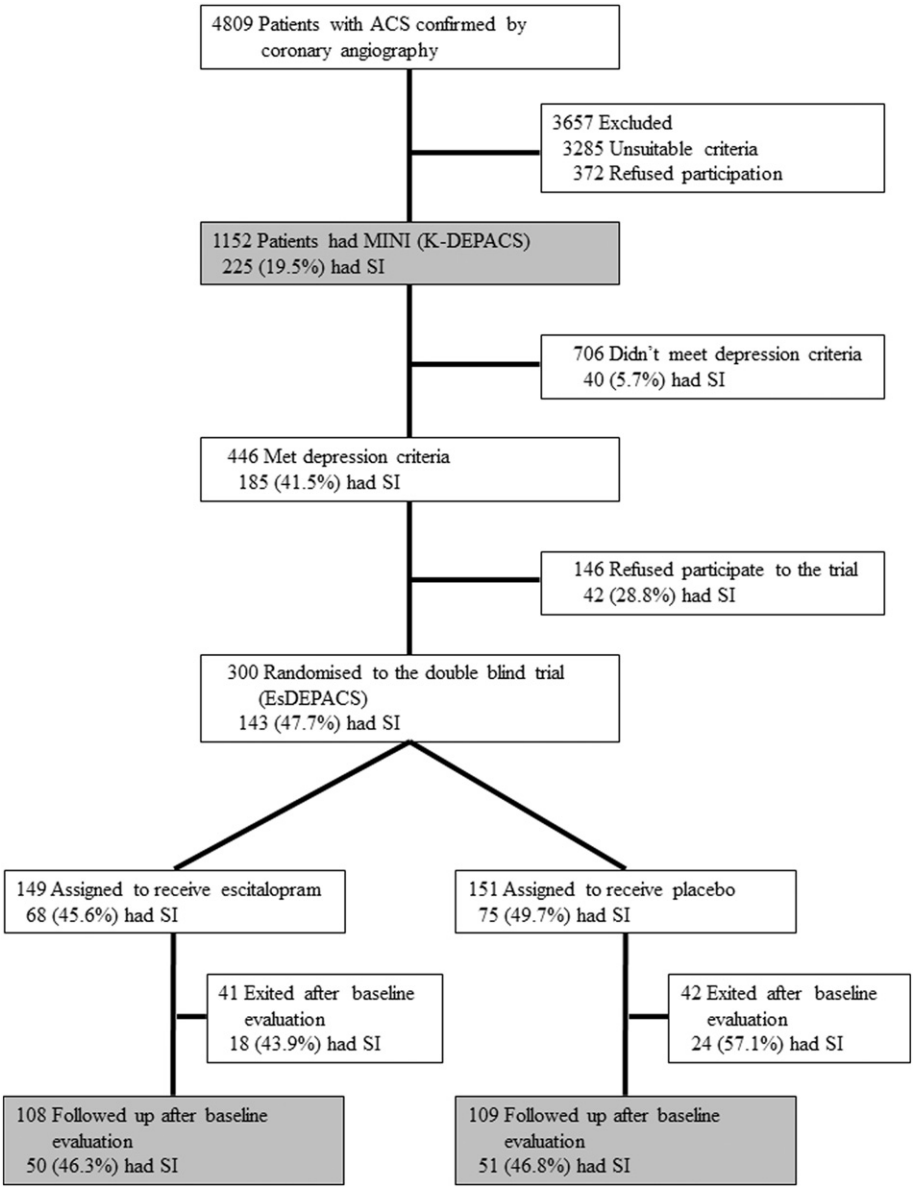

Fig. 1. Participant recruitment process and prevalence of suicidal ideation. ACS, acute coronary syndrome; BDI, Beck Depression Inventory; MINI, Mini-International Neuropsychiatric Interview; SI, Suicidal ideation; K-DEPACS, Korean DEPression in Acute Coronary Syndrome study; EsDEPACS, Escitalopram for DEPression in Acute Coronary Syndrome study.