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Depression and clinical inertia in patients with uncontrolled hypertension

Nathalie Moise, MD¹, Karina W. Davidson, PhD^{1,2}, William Chaplin, PhD^{1,3}, Steven Shea, MD, MS^{1,4}, and Ian Kronish, MD, MPH¹

¹Center for Behavioral and Cardiovascular Health, Division of General Medicine, Columbia University Medical Center, New York, NY

²Department of Psychiatry, Columbia University Medical Center, New York, NY

³St. John's University, Queens, NY

⁴Department of Epidemiology, Joseph Mailman School of Public Health, Columbia University, New York, NY

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TO THE EDITOR

Introduction

Depression is a known risk factor for poor prognosis among patients with cardiovascular disease¹. Numerous biological and behavioral mechanisms have been proposed². However, few studies have investigated the association between depression and ‘clinical inertia’, or lack of treatment intensification in individuals not at evidence-based goals for care³. To address this gap, we assessed whether a diagnosis of depression is associated with clinical inertia in patients with uncontrolled hypertension.

Corresponding Author: Nathalie Moise, MD, Division of General Medicine, Columbia University Medical Center, 622 W. 168th St, PH9 Center, Room 320 New York, NY 10032; Phone: 212-342-2889; Fax 212-342-3431 (nm2562@cumc.columbia.edu).

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Methods

Between February, 2011 and September, 2013, we enrolled a convenience sample of 28 non-trainee primary care providers (PCP) and 158 patients with uncontrolled hypertension from two inner-city, academic hospital-based primary care clinics. Patients were eligible if they were ≥ 18 years old, prescribed one or more blood pressure (BP) medications, and had a BP $\geq 140/90$ mmHg (or $\geq 130/80$ mmHg if diabetic or with chronic kidney disease) on at least two consecutively scheduled visits with their PCP. Exclusion criteria were age > 80 years and dementia. Clinical inertia was defined as a lack of medication intensification, hypertension specialist referral, or work-up for identifiable hypertension despite uncontrolled BP. Depression status was based on PCP documentation in the electronic medical record.

We assessed established predictors of clinical inertia⁴, including age, gender, current visit systolic blood pressure (SBP), prior visit SBP, number of BP medications, number of medical problems addressed during the visit, diabetes status, and medication adherence (Morisky Medication Adherence Scale). All measures were either abstracted from the medical record by a physician or, in the case of medication adherence, by interviewing patients following the clinic visit. The institutional review board of Columbia University Medical Center approved the protocol. Multilevel analysis to account for clustering within PCP was used to determine whether depression diagnosis was associated with clinical inertia after adjusting for established predictors of clinical inertia. Sensitivity analyses were performed in which we (1) excluded 36 patients with clinician uncertainty regarding BP control status (i.e., documentation of at least one home or current visit BP that was controlled)⁵ (2) adjusted for PCP documentation of adherence assessment (3) excluded diabetics with SBP ≥ 140 mmHg. We used SAS Version 9.3 (SAS Institute Inc., Cary, NC) for all statistical analyses.

Results

The mean age (SD) of patients was 64.5 (8.8) years; 74.1% were women, 79.1% were Hispanic, 44.9% was diagnosed with depression and 61.2% had diabetes. On average, participants had a prior visit SBP of 158.7 (15.7) mmHg, current visit SBP of 154.6 (16.7) mmHg, were taking 2.5 (1.1) BP medications and had 5.3 (2.3) problems addressed during the visit. Clinical inertia was more common amongst depressed than non-depressed patients (70% vs. 51%; $p=0.015$). Depression diagnosis was associated with clinical inertia in both the adjusted and unadjusted multilevel analyses (RR=1.40; 95% CI, 1.11–1.74; $p=0.004$; adjusted relative risk [ARR]= 1.49; 95% CI, 1.06–2.10; $p=0.021$). The relationship remained after excluding those with at least one documented home or clinic visit SBP below goal (ARR=1.74; 95% CI, 1.07–2.83; $p=0.025$), adjusting for adherence counseling (ARR=1.49; 95% CI, 1.10–2.04; $p=0.010$) and excluding diabetics with SBP ≥ 140 mmHg (ARR=1.49; 95% CI, 0.99–2.23 $p=0.057$).

Discussion

Amongst patients with uncontrolled hypertension, clinical inertia was more likely in those with a diagnosis of depression. Hence, clinical inertia may be one mechanism by which depressed patients have worse cardiovascular outcomes. Research has shown that patients

with mental illness receive less intensive medical care, such as coronary revascularization⁶; our study extends this literature by demonstrating differences in clinician behavior with respect to cardiovascular risk factor management in this population. Future studies should explore the underlying processes that affect clinician treatment practices when managing a depressed patient. In the meantime, PCPs should be cautious about undertreating cardiovascular risk factors among patients identified as having depression.

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References

1. Lett HS, Blumenthal JA, Babyak MA, et al. Depression as a Risk Factor for Coronary Artery Disease: Evidence, Mechanisms, and Treatment. *Psychosomatic Medicine*. May 1; 2004 66(3):305–315. 2004. [PubMed: 15184688]
2. Burg MM, Edmondson D, Shimbo D, et al. The ‘Perfect Storm’ and Acute Coronary Syndrome Onset: Do Psychosocial Factors Play a Role? *Progress in Cardiovascular Diseases*. May; 2013 55(6):601–610. [PubMed: 23621970]
3. O’Connor, PJ.; Sperl-Hillen, JAM.; Johnson, PE.; Rush, WA.; Biltz, G. *Clinical Inertia and Outpatient Medical Errors Advances in Patient Safety: From Research to Implementation (Volume 2: Concepts and Methodology)*. Rockville MD: 2005.
4. Heisler M, Hogan MM, Hofer TP, Schmittiel JA, Pladevall M, Kerr EA. When More Is Not Better: Treatment Intensification Among Hypertensive Patients With Poor Medication Adherence. *Circulation*. Jun 3; 2008 117(22):2884–2892. 2008. [PubMed: 18506011]
5. Kerr EA, Zikmund-Fisher BJ, Klamerus ML, Subramanian U, Hogan MM, Hofer TP. The Role of Clinical Uncertainty in Treatment Decisions for Diabetic Patients with Uncontrolled Blood Pressure. *Annals of Internal Medicine*. 2008; 148(10):717–727. [PubMed: 18490685]
6. Druss BG, Bradford DW, Rosenheck RA, Radford MJ, Krumholz HM. Mental disorders and use of cardiovascular procedures after myocardial infarction. *JAMA*. 2000; 283(4):506–511. [PubMed: 10659877]