Pharmacotherapy Prescribing to Patients with Concurrent Tobacco and Alcohol Use Disorder in a Large, Urban, Integrated Health System

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INTRODUCTION

Tobacco use disorder (TUD) and alcohol use disorder (AUD) are two leading causes of preventable death in the USA. These disorders frequently occur concurrently, leading to multiplicative effects on morbidity and mortality.[1] Treatment of AUD and TUD with pharmacotherapy is an evidence-based way to reduce these harms. The prevalence of pharmacotherapy prescribing for patients with coexisting AUD and TUD is poorly understood. We conducted a retrospective cohort study to determine the prevalence of prescribing of AUD and TUD pharmacotherapy in a population with both diagnoses.

METHODS

We conducted a retrospective cohort study using electronic health record data from Montefiore Health System between January 2010 and December 2014. Montefiore Health System is a large urban academic medical center and integrated health care system in the Bronx, New York, with over 3 million outpatient visits annually at a network of almost 100 primary and specialty care clinics.

Inclusion criteria were (1) age ≥ 18 years and (2) concurrent TUD and AUD diagnoses, defined by International Classification of Diseases, 9th Revision, Clinical Modification, diagnosis codes (ICD-9) or problem list entries indicating both TUD and AUD (list available from the authors upon request). We defined concurrent TUD and AUD as both disorders being actively documented during the study period and actively documented within 90 days of each other. We excluded patients if they were prescribed TUD or AUD pharmacotherapy within 6 months prior to cohort entry (defined as time of AUD diagnosis).

We defined TUD pharmacotherapy as any prescription for nicotine replacement therapy, varenicline, or bupropion within 1 year of TUD diagnosis. We defined AUD pharmacotherapy as any prescription for acamprosate, naltrexone, topiramate, or disulfiram within 1 year of AUD diagnosis. Despite not being FDA-approved for treatment of AUD, we included topiramate as it is used off-label for this indication. In addition, we extracted age, sex, race/ethnicity, and insurance status.

To describe trends in pharmacotherapy prescribing, we classified patients into mutually exclusive categories: no pharmacotherapy, AUD pharmacotherapy only, TUD pharmacotherapy only, or both. For each year, we calculated the percentage of patients in each category. We used chi-square tests to assess the trend in the incidence of pharmacotherapy over the 5-year period.

Finally, we conducted a sensitivity analysis by excluding patients from the cohort who had alternative indications for the pharmacotherapies (major depressive disorder and buproprion, seizure disorder or migraine headaches and topiramate, and opioid use disorder and naltrexone).

The study was approved by the Albert Einstein College of Medicine Institutional Review Board.

RESULTS

We identified 5065 patients with concurrent TUD and AUD diagnoses. The cohort was 71.9% male, 40.7% non-Hispanic Black, and 71.2% publicly insured (Table 1). Over the 5-year study period, most patients (87.7%) were not prescribed pharmacotherapy for TUD or AUD within one year of cohort entry. TUD pharmacotherapy alone was prescribed to 10.6%, AUD pharmacotherapy alone was prescribed to 1.4%, and both were prescribed to 0.3% of patients.

The percentage of patients prescribed pharmacotherapy increased during the study period for all groups: TUD pharmacotherapy only (9.5 to 14.2%, $p < 0.001$), AUD pharmacotherapy only (1.0 to 2.1%, $p < 0.001$), and both TUD and AUD pharmacotherapy (0.5 to 0.7%, $p = 0.04$ Fig. 1). In our sensitivity analysis, estimates of TUD pharmacotherapy prescribing alone (10.4%) and AUD pharmacotherapy prescribing alone (1.1%) over the study period were slightly lower than our main analysis.

This data was first presented at the Association for Medical Education and Research in Substance Abuse National Conference in Washington DC in November 2016.

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Table 1 Demographic and clinical characteristics of patients with new, concurrent, alcohol, and tobacco use disorder diagnoses in a large urban integrated health care system ($n = 5065$)

Characteristic	All patients ($n = 5065$)
Age, *n* (%)	
18–29	615 (12.1)
30–44	1334 (26.3)
45–64	2518 (49.7)
65+	598 (11.8)
Female sex, *n* (%)	1424 (28.1)
Race/ethnicity, *n* (%)	
Hispanic, of any race	432 (8.5)
Non-Hispanic white	844 (16.7)
Non-Hispanic black	2044 (40.4)
Any other[a] or undetermined race	1320 (26.1)
Insurance status, *n* (%)	
Public	3604 (71.2)
Private	1145 (22.6)
Self-pay	266 (5.3)
Charlson score, *n* (%)	
0	2380 (47.0)
1–2	1697 (33.5)
3+	988 (19.5)

[a]*Includes Asian/Pacific Islander, Native American/Alaskan Native, or more than one race*

DISCUSSION

At a large urban health care system, prescribing of TUD and AUD pharmacotherapy to patients with both disorders was exceptionally low. Although the rate of pharmacotherapy prescribing increased over the study period, we found prescribing rates were much lower than other studies assessing pharmacotherapy prescriptions for each diagnosis in isolation[2, 3] or with coexisting diagnoses.[4] Because our analysis did not exclude patients with AUD or TUD diagnosis prior to the cohort period, we may underestimate the prevalence of pharmacotherapy prescribing.

Given our study setting and patient population, low prescribing rates may also reflect disparities in care among racial/ethnic minorities and the urban poor, as seen in other studies.[5] Over the last several decades, clinical, research, and policy interventions have increased the rates of TUD pharmacotherapy prescribing.[6] Similar efforts are needed to identify and treat patients with concurrent substance use disorders, with a focus on addressing racial/ethnic disparities.

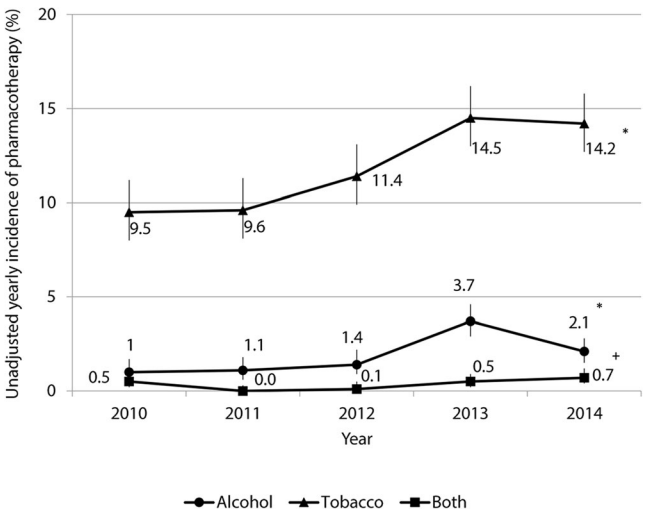

Fig. 1 Percentage of patients with new, concurrent, tobacco, and alcohol use disorder receiving a pharmacotherapy prescription in a large urban integrated health care system, 2010–2014. Error bars represent 95% CI. Alcohol pharmacotherapy represents the percentage of patients who received acamprosate, naltrexone, topiramate, or disulfiram. Tobacco pharmacotherapy represents the percentage of patients who received nicotine replacement therapy, bupropion, or varenicline. Both includes patients who received pharmacotherapy for both alcohol and tobacco use. *Chi-square test $p < 0.001$, +chi-square test $p = 0.04$

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Compliance with Ethical Standards:

The study was approved by the Albert Einstein College of Medicine Institutional Review Board.

Conflict of Interest: *The authors declare that they do not have a conflict of interest.*

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