Social Vulnerability and Management of Depression and Anxiety in Medication-related Osteonecrosis of the Jaw

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Introduction

- Medication-related osteonecrosis of the jaw (MRONJ) is a rare, but debilitating disease linked to exposure to anti-angiogenic and anti-resorptive drugs for cancer or osteoporosis.[1]
- Patients often experience pain and reduced quality of life, negatively impacting patients' eating, physical appearance, speech, breathing, and swallowing, leading to increased symptoms of anxiety and depression.[2,3,4]
- There is limited data on the impact of social factors on the diagnosis and treatment of anxiety and major depression in patients with MRONJ.
- Patients with higher social vulnerability, characterized by lower socioeconomic status, limited health literacy, and reduced access to multidisciplinary care, may be at increased risk for suboptimal management of both MRONJ and its psychological sequelae.

Purpose

- Our study aims to analyze the association between management of depression and anxiety in MRONJ and CDC social vulnerability index.

Methods

- Population based retrospective cohort study using Epic Cosmos, an aggregated electronic health record dataset including >300 million patients from >1700 hospital and clinics across the United States.
- Patients diagnosed with Medication-Related Osteonecrosis of the Jaw (International Classification of Diseases, 10th Revision (ICD-10) M87.180) with available demographic data were included.
- CDC Social Vulnerability Index (SVI) is used to represent social determinants of health and reflects demographic and socioeconomic factors affecting communities that encounter neighborhood-level stressors, where lower SVI indicates lower social vulnerability.
- Outcomes studied include diagnosis of depression (ICD-10 codes F32.* and F33.*) and anxiety (ICD-10 codes F40.*, F41.*, and F42*), as well as treatment with anti-depressant and anti-anxiety medications within 2 years of MRONJ diagnosis.
- Statistical significance was determined using chi-squared tests.

Results

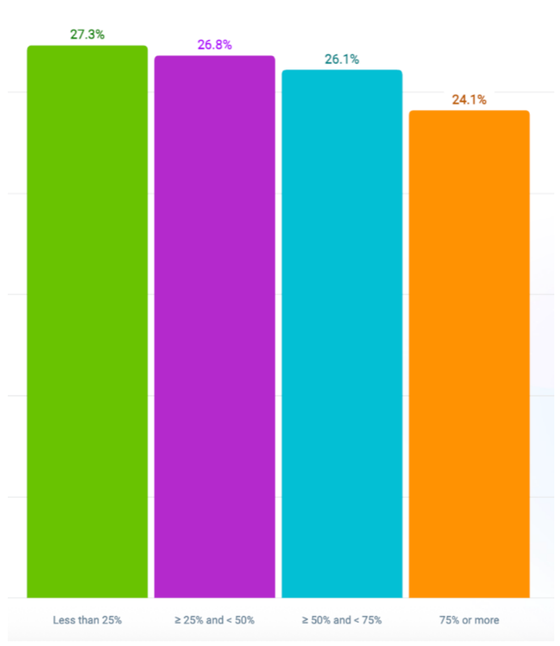
Characteristics of study cohort	Patients with MRONJ (n=18095)
Sex	
Male	36.0%
Female	64.0%
Diagnosis with depression (F32.*, F33.*)	23.9%
Diagnosis with anxiety (F40.*, F41.*, F42.*)	25.9%
SVI quartile	
<25%	19.6%
>=25% and <50%	24.5%
>=50% and <75%	25.2%
>=75%	30.9%
Rural-Urban Commuting Area Code (RUCA)	
RUCA 1-7 (non-rural)	96.1%
RUCA 8-10 (rural)	3.9%
Census Region	
Midwest	25.6%
South	37.7%
Northeast	20.0%
West	18.3%

Table 1: Patient Demographics

Graph 1: Percentage of MRONJ patients diagnosed with depression

Highest SVI quartile **significantly** associated with lower rates of diagnosis, p<0.001

Graph 2: Percentage of MRONJ patients diagnosed with anxiety

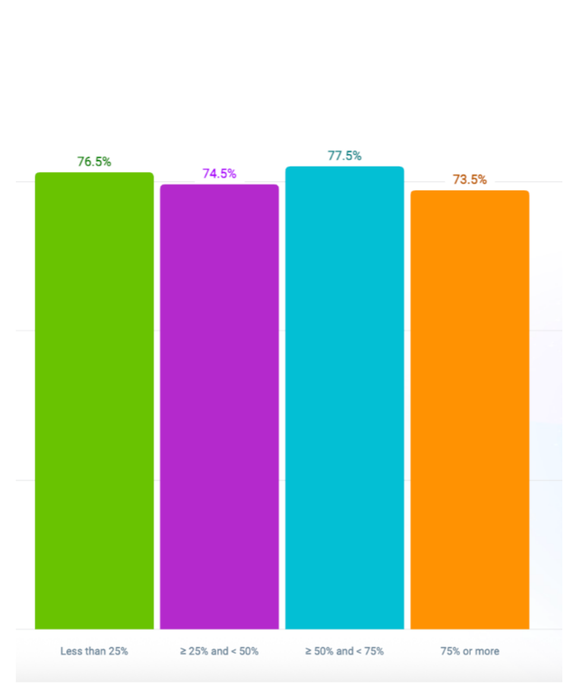


Highest SVI quartile **significantly** associated with lower rates of diagnosis, p<0.001

Graph 3: Percentage of MRONJ patients diagnosed with depression treated with antidepressants

Highest SVI quartile **significantly** associated with lower rates of treatment compared to other three quartiles, p=0.009

Graph 4: Percentage of MRONJ patients diagnosed with anxiety treated with anti-anxiety medications



Highest SVI quartile is **not significantly** associated with lower rates of treatment compared to other three quartiles, p=0.052

Conclusions and Discussion

- There are disparities in the rate of diagnosis and treatment of anxiety and depression among patients with MRONJ based on social vulnerability.
- Lower rates of diagnosis and treatment seen among the most socially vulnerable patients.
- Targeted strategies in the future to increase equity in patient diagnosis and treatment should be explored to reduce disparities in MRONJ management.
- Interdisciplinary interventions with ENTs, dental care, and mental health may make mental health diagnosis and treatment more accessible.
- Limitations: availability of diagnosis and treatment records in Epic COSMOS; unable to specify patterns of treatment; not controlled for co-morbidities; no records on other treatment modalities such as cognitive behavioral therapies.

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