

The CARS Study: Exploratory Data Analysis on Youth ECT Patients

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In youth with severe psychiatric conditions, ECT is associated with positive outcomes in the majority of cases. The clinical profile of youth patients receiving ECT showed a predominance in males with depression with a notably higher use in psychotic disorders compared to adult populations.

Introduction

- Youth ECT is only considered in extreme circumstances by the AACAP. Requirements include: a diagnosis of severe and persistent mental illness, the presence of disabling or life-threatening symptoms, and a lack of response to at least two adequate trials of appropriate medications¹.
- ECT is well-established as an effective treatment for severe mental illnesses in adults, however questions persist about its appropriateness for youth².
- Given, youth psychiatric conditions lead to ↑ school dropout rates, healthcare utilization, and suicide risk, their effective treatment is crucial³.
- The database of 24 or younger patients was created based on the consensus that the brain completes development at the age of 25, to target ECTs affect on the youth-developing brain⁴.
- Our aim is to elucidate the demographic, clinical profiles, and outcomes of youth patients with severe psychiatric conditions undergoing ECT to better understand the population being treated.

Methods

Participants: 32 patients aged 24 or younger were selected from an observational cohort study (CARS)

Measures: Demographic and clinical characteristics were recorded. Clinical global impression (CGI) scores on illness severity and global improvement were recorded pre-ECT and post-ECT. Prescribed medications were recorded only for ECT treatment 1

Procedure: Treatments of ECT.

Analysis: All tables and graphs were generated from excel.

Table 1: Demographic Characteristics

Population	Male (% or SD)	Female (% or SD)
# of Patients	20 (63%)	12 (38%)
Age (years)		
Mean	18.8 (4.15)	19.5 (2.73)
Range	9-24	14-22
Sex		
Mean Weight (Kg)	71.4 (18.06)	69.1 (23.28)
Mean Height (cm)	174.7 (5.79)	165.7 (8.82)
Age Onset	14.6 (3.62)	15 (2.97)
Employment Status		
Employed student	11 (55%)	6 (50%)
Unknown	6 (30%)	6 (50%)
Unemployed	3 (15%)	0
Marital Status		
Single	17 (85%)	8 (67%)
Unknown	3 (15%)	4 (33%)

Results

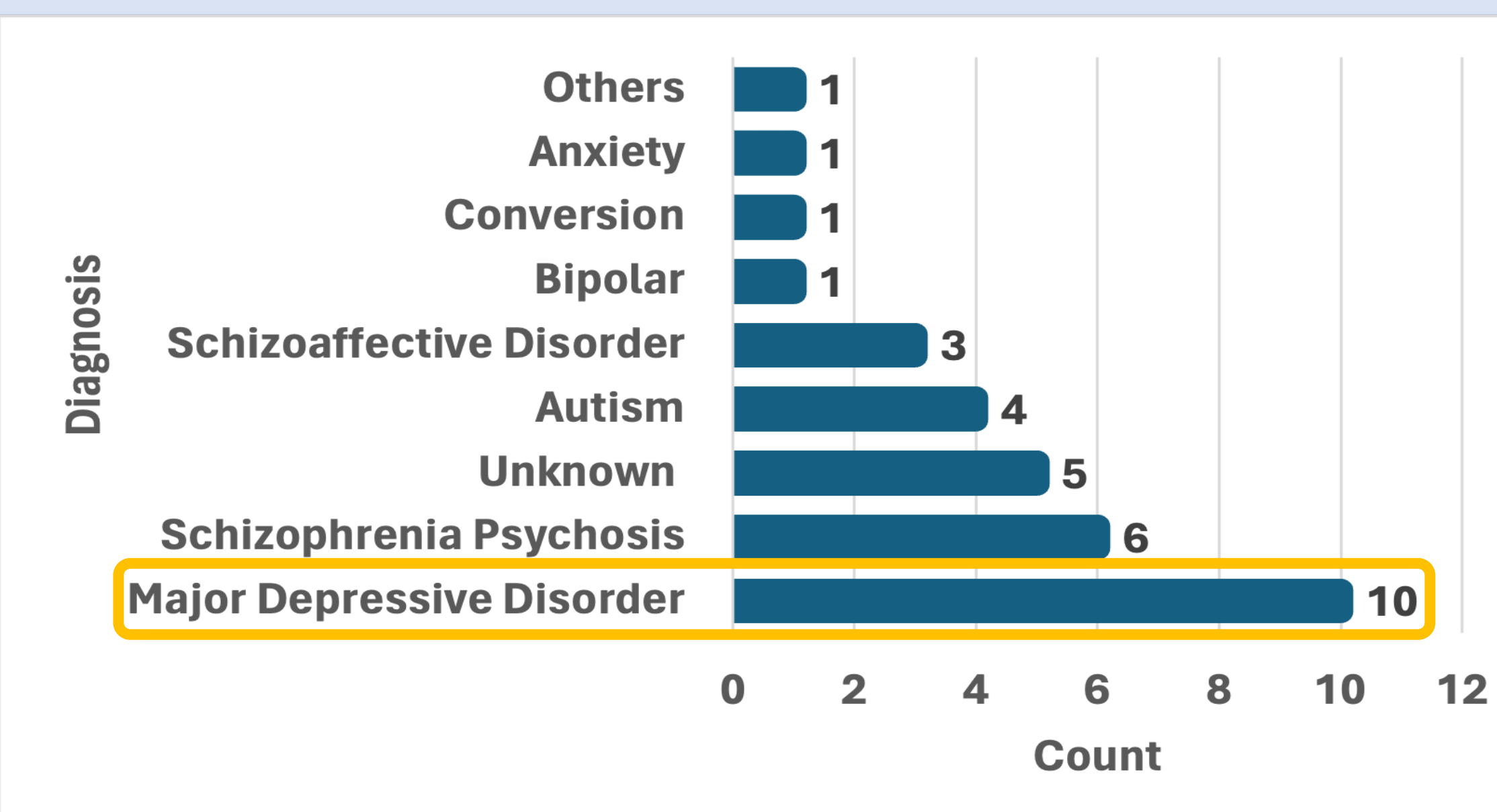


Figure 1. Diagnosis of Patients.

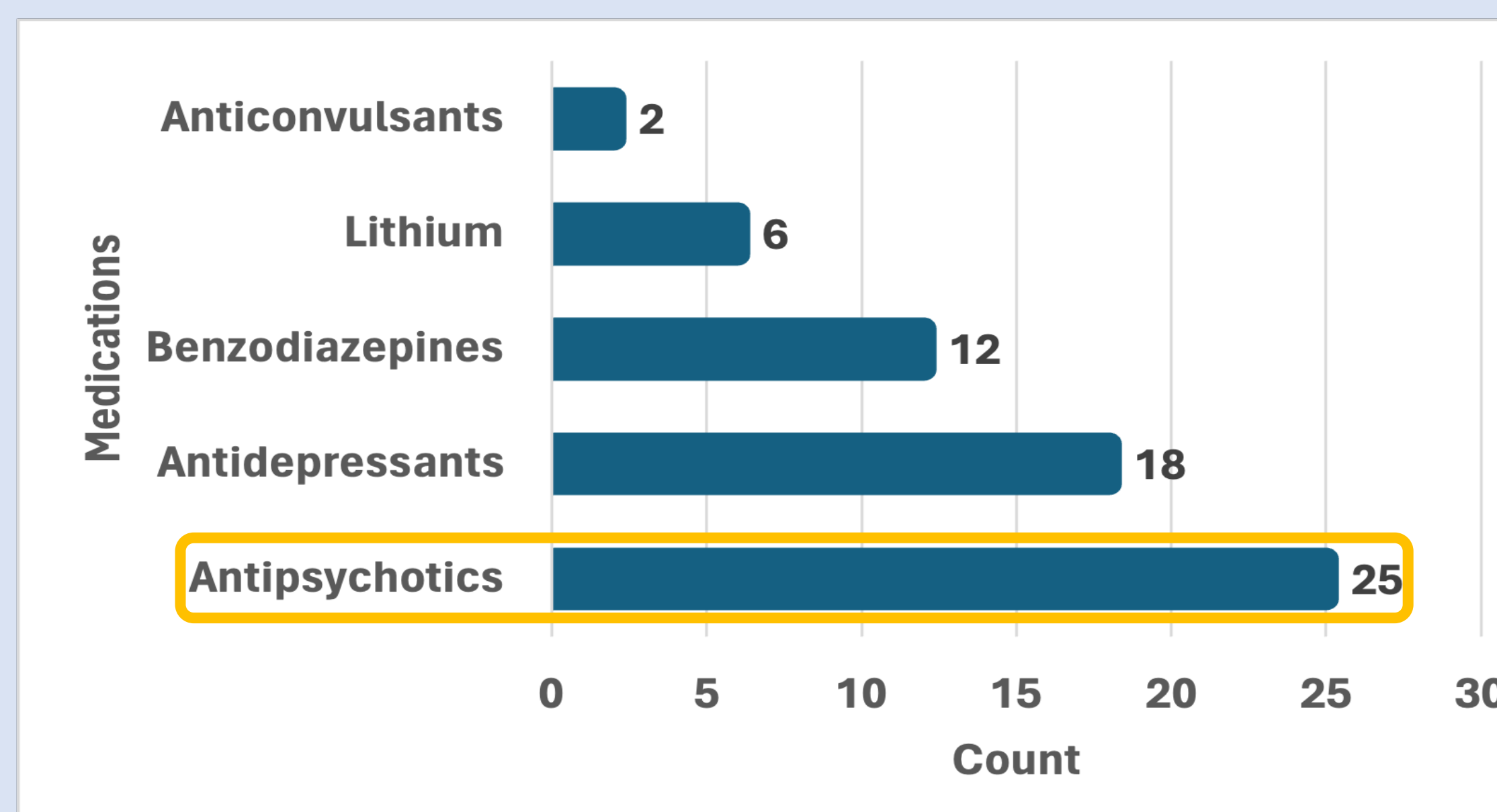


Figure 2. Prescribed Medications.

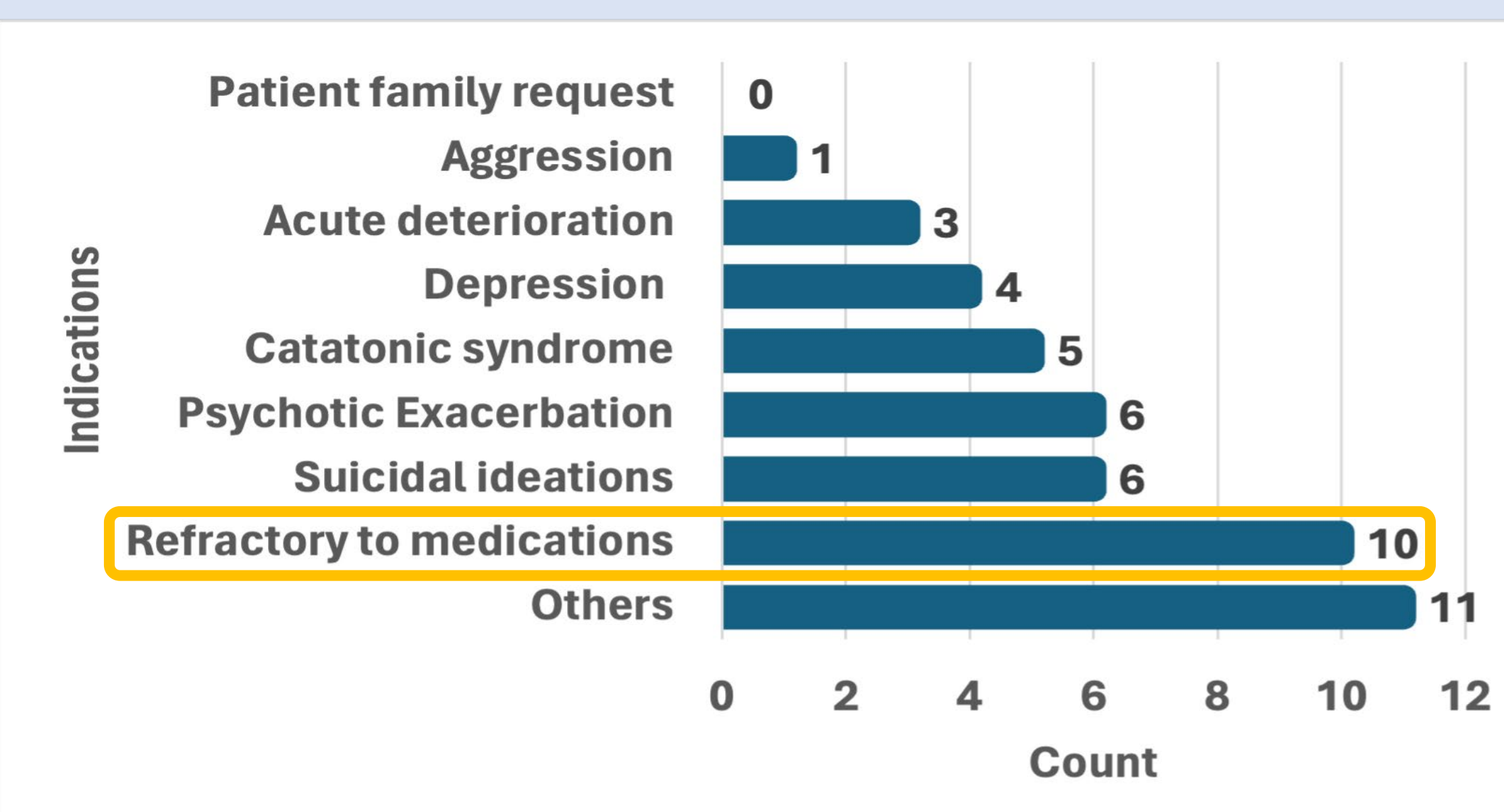


Figure 3. Indications for ECT.

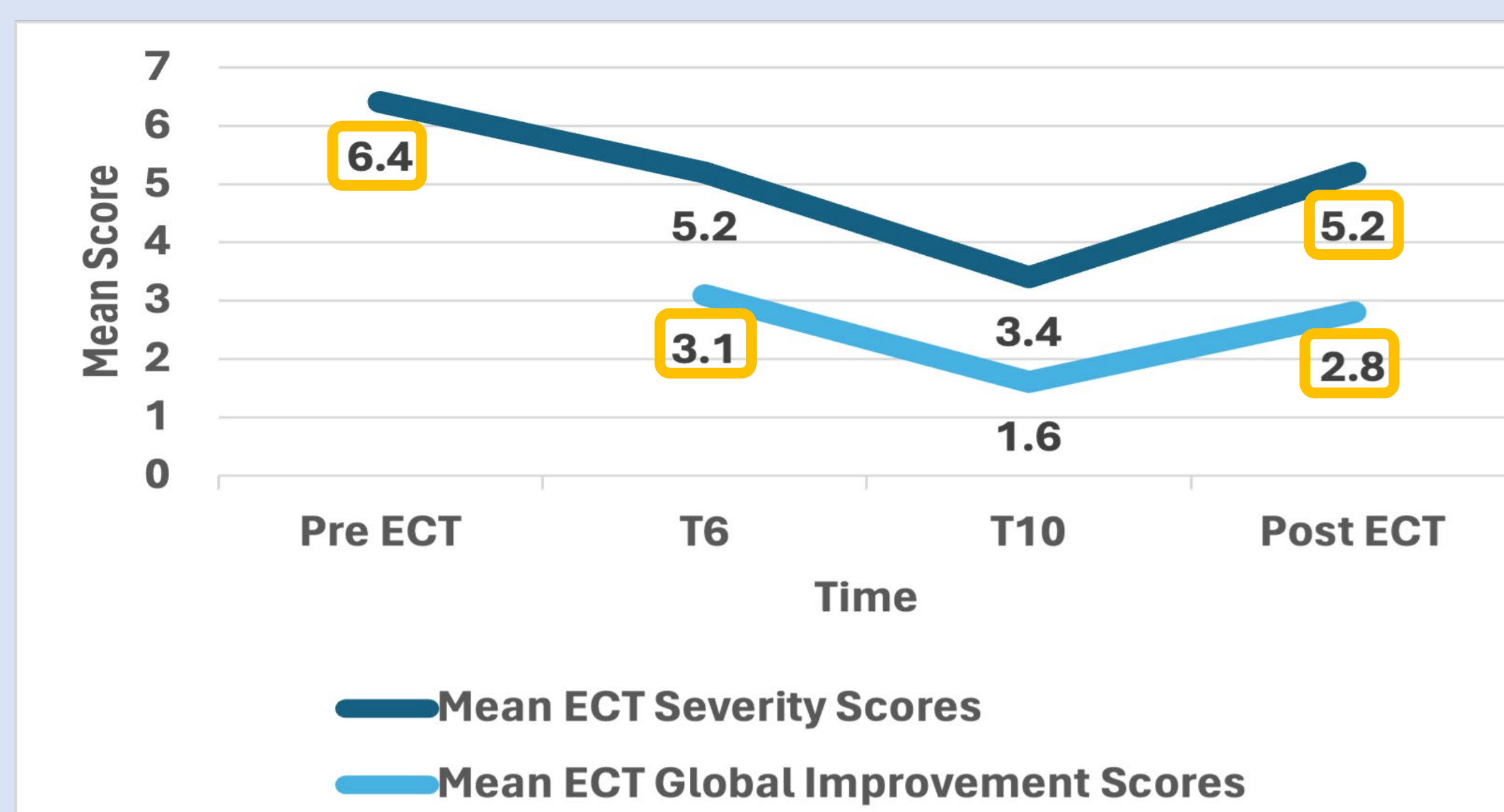


Figure 4. Illness Severity and Global Improvement Scores.

Severity scores graded: 0-Not Assessed, 1-Normal (not ill), 2-Borderline mentally ill, 3-Mildly ill, 4-Moderately ill, 5-Markedly ill, 6-Severely ill, 7-Among most ill. Improvement Scores graded: 0-Not Assessed, 1-Very much improved, 2-Much improved, 3-Minimally improved, 4- No change, 5-Minimally worse, 6-Much worse, 7-Very much worse.

Discussion

Trends in ECT Utilization and Diagnosis:

- Major Depressive Disorder emerges as a prevalent indication for ECT, reflecting a shift towards recognizing ECT's efficacy treating in severe depression⁵.
- Given the High rate of antipsychotic medications prescribed it suggests that the unknown diagnosis may have been related to psychotic disorders like Schizophrenia.
- Higher rates of psychotic disorder treatment in youth patients compared to adults indicate a divergence in diagnostic patterns⁶.
 - This could be related to ECT's use in only the most severe psychiatric disorders such as schizophrenia.
- While literature suggests higher rates of depression in women, this study found equal rates among both sexes, hinting at potential diagnostic discrepancies^{7,8}.
 - Perhaps, the onset of depression in females is post brain development when compared to men.

Effectiveness of ECT:

- Refractory medication response remains the primary indication for ECT, consistent with current trends^{9,10}.
 - This was expected due to the AACAP regulation requiring two courses of medication before ECT in youth.
- Severity and global improvement scores show positive trends underscoring ECT's clinical efficacy. Though there is a notable decline from Treatment 10 to post-ECT.
 - This trend suggests that ECT is effective in youth similar to adults

Study Limitations:

- Subject to biases inherent in long-term data collection, including recall and selection biases.
- Reliance on historical records and participant recall introduces risks of misclassification and information biases

Future Direction:

- With a better understanding of our database the CARS project will begin data analysis

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