Treatment of Catatonia and Length of Stay

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Background

- Catatonia is a group of symptoms observed in several psychiatric and developmental disorders, primarily schizophrenia[1].
- Catatonia has several different manifestations, including stuporous catatonia and excited catatonia[1].
- Stuporous catatonia is characterized by mutism, negativism, rigidity, and stupor[1].
- Excited catatonia shows hyperactivity.
- Catatonia's cause is proposed to be an over activity of excitatory networks in the brain[2].
- Catatonia is responsive to Benzodiazepines, which serve as the first line treatment as well as a diagnostic tool in the 'Lorazepam Challenge Test'[3].
- There is little information regarding timing of benzodiazepine use.
- The use of antipsychotics (particularly typical antipsychotics) is detrimental to catatonic patients, sometimes resulting in neuroleptic malignant syndrome (NMS)[1,4].
- Atypical antipsychotics can also worsen catatonia and lead to NMS, though the effect is believed to be less severe and the evidence is less substantiated. Many patients presenting with catatonia are continued on atypical antipsychotics due to comorbid schizophrenia[1,4].

Hypothesis

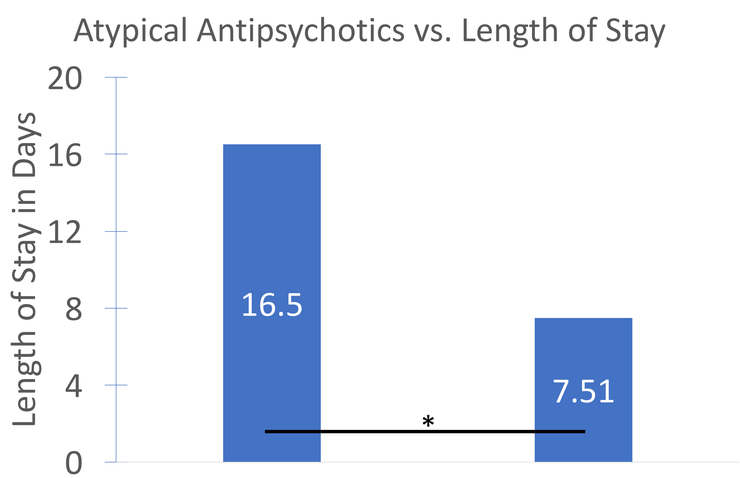
- We hypothesized an increased length of stay with the use of atypical antipsychotic medications. We hypothesized that early administration of Benzodiazepines would reduce length of stay, and that length of stay could be correlated with age, gender, race, and payer status

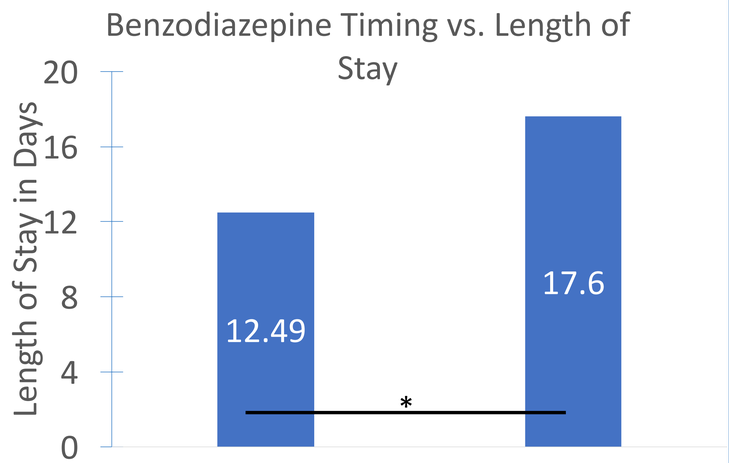
Methods

Data was obtained from Cerner Health Facts, itself derived from the EMR of hospitals that have an agreement with Cerner. The data used represents HIPAA-compliant information from patients of diverse backgrounds in order to best represent the nation's population. The cohort for this study was identified using ICD-9 or ICD-10 coding and/or Current Procedural Terminology (CPT), searching for encounters involving a diagnosis of catatonia. 981 unique encounters of catatonia were used to compare length of stay in correlation to many provided variables, such as use of an atypical antipsychotic, payer status, geographic location, administration time of medication, age, etc.
We split the data into two sets: 1) one set consisting of all encounters and 2) one set consisting only of encounters where benzodiazepines were administered to the patient.

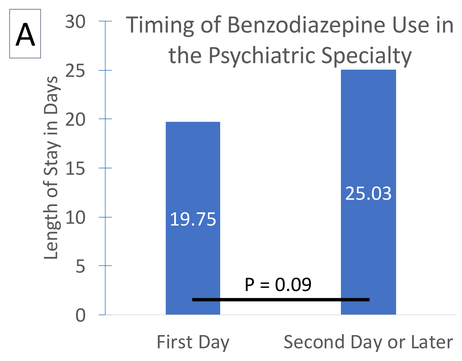
Catatonic patients given **atypical antipsychotics** have a significantly **longer** length of stay

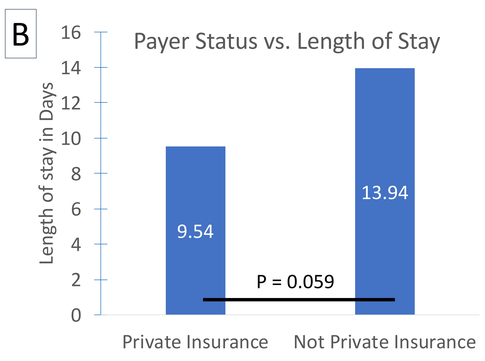
Catatonic patients treated **early** with a benzodiazepine have a significantly **shorter** length of stay compared with those treated later

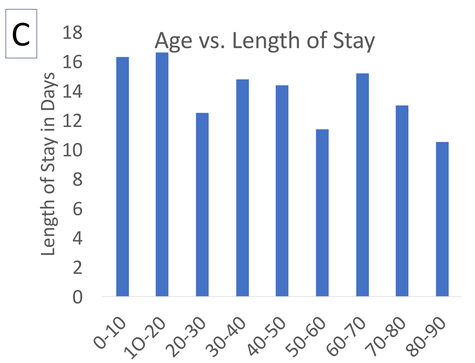




* = P ≤ 0.001







A: Timing of Benzodiazepine Administration In Psychiatric Specialties vs. LOS. Despite a seeming relationship between Time Taken to Administer Benzos and LOS in Psychiatry, analysis yielded insignificant p-value (0.09).
B: Payer Status vs. LOS. Despite a seeming relationship between Payer Status and LOS, analysis yielded insignificant p-value (0.059).
C: Age of Patient vs. LOS. No apparent relationship exists between Age and LOS.

Conclusion

- Use of atypical antipsychotic medications is correlated with an increased length of stay- use doubles the average length of stay ($p<0.001$)
- This supports the connection between atypical antipsychotic use and worsened severity of catatonia, and indicates that healthcare providers should consider taking patients presenting with catatonia off of atypical antipsychotics until the catatonia has resolved
- Late administration of benzodiazepines extends average length of stay by 40% ($p=0.001$).
- This indicates that Benzodiazepines should be administered as soon as catatonia is identified.
- Further research is necessary to identify the cause of late administration, be that late diagnosis, low prioritization, or perceived risks of misadministration.
- Several variables correlated with length of stay were close to significance, and further research with larger data sets is necessary to establish whether these are true correlations.
- Our group also identified several variables that did not correlate with length of stay, including gender, census region, and age.
- Our results are limited in application due to possible pre-existing differences between groups who would be receiving atypical antipsychotics, or further groups whose treatment with benzodiazepines would be delayed.

References

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