

Is Suicidal Ideation Risk Associated With Pharmacotherapy in Attention-Deficit Hyperactivity Disorder (ADHD)? A Real-World Study

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BACKGROUND

- Individuals with ADHD have an elevated risk of suicidal ideation (SI) compared to those without ADHD.¹
- Current evidence on the association between ADHD pharmacotherapy and SI risk remains limited.

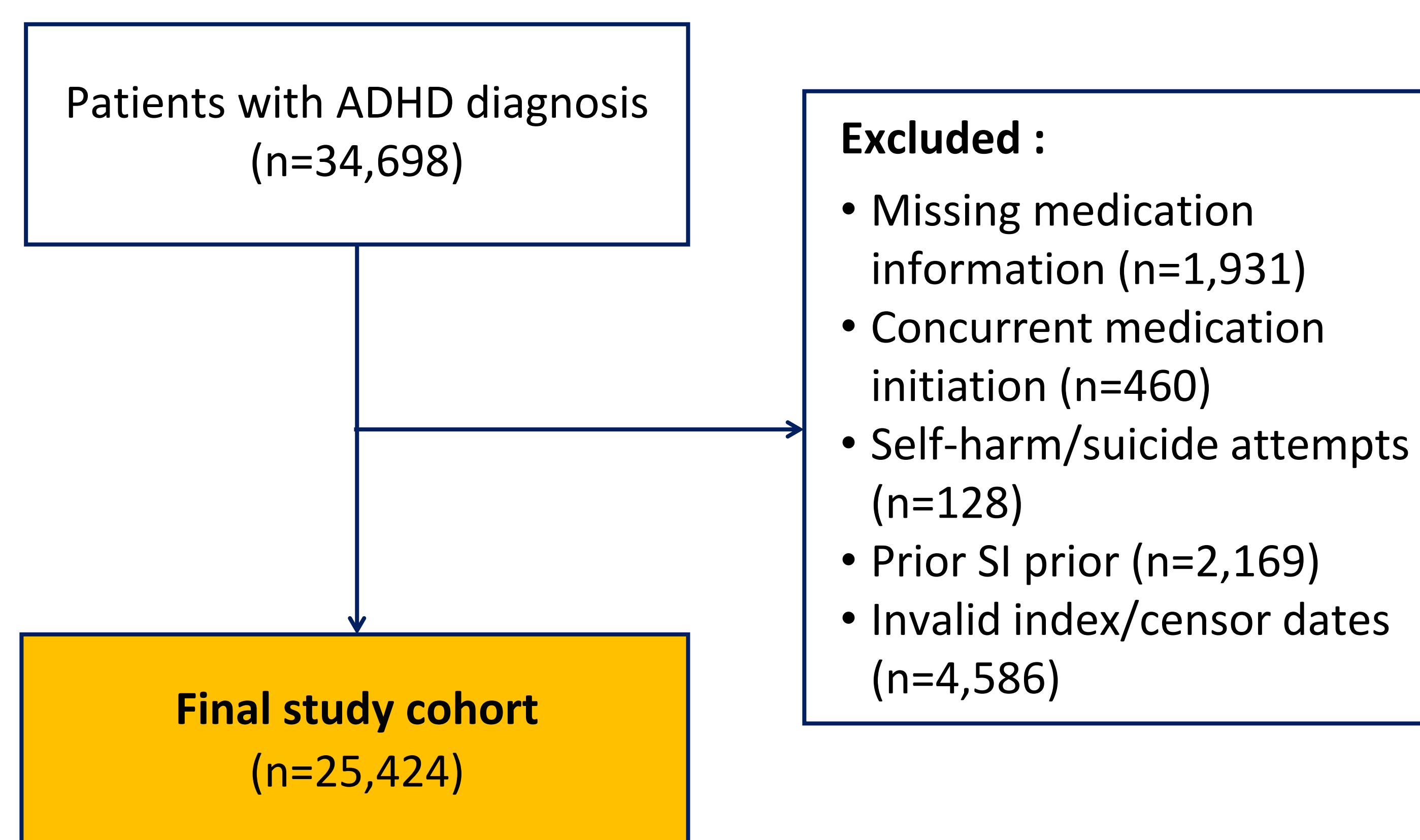
OBJECTIVE

- To examine the association between pharmacotherapy treatment and SI among patients with ADHD in West Virginia, United States.

METHODS

- Study design:** Retrospective longitudinal study.
- Data source:** TriNetX Research Network containing de-identified Electronic Health Records (2007 to 2023).
- Comparison groups:** Stimulants, non-stimulants, and no pharmacotherapy
- Inclusion criteria:** ADHD patients with medication data
- Exclusion criteria:** Prior SI, history of self-harm/suicide attempts, or the same first medication date for stimulants and non-stimulants initiation.
- Study timeline and follow-up:** Baseline covariates assessed during the 12-month baseline period. Follow-up continued until first occurrence of SI, medication discontinuation /switching, death, or end of the study period.
- Outcome:** Time-to-event risk of SI
- Statistical analysis:** Kaplan-Meier and Cox proportional hazards models with inverse probability of treatment weighting (IPTW) adjustment for confounding.

Figure 1: Study flow diagram



RESULTS



Stimulant use was associated with a lower risk of SI vs. no pharmacotherapy



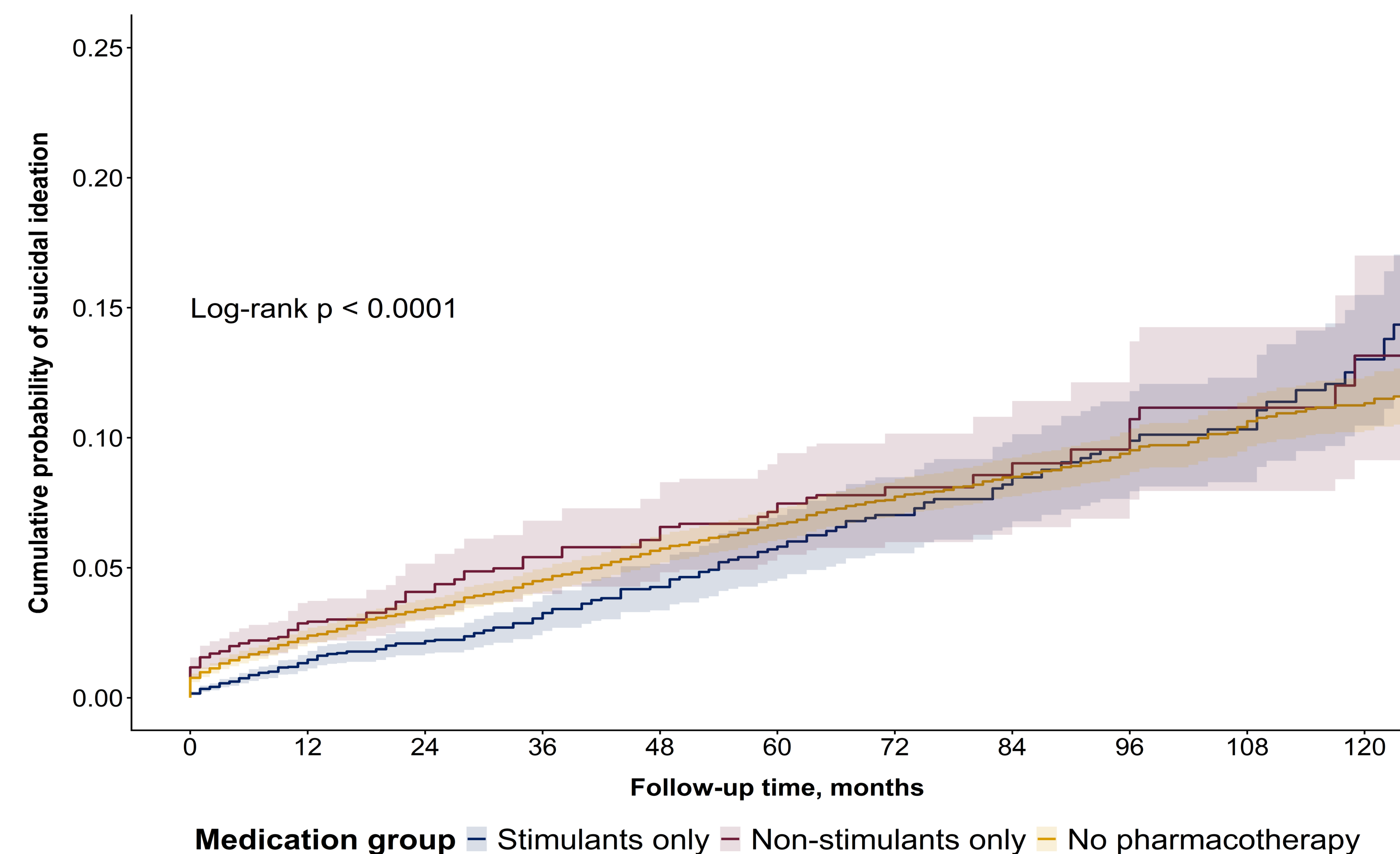
Psychiatric comorbidities substantially increased the risk of SI

Table 1: Baseline characteristics of the study cohort by medication group

| Characteristic | Total population | No pharmacotherapy | Stimulant users | p† | Non-stimulant users | p‡ |
|--------------------------------|------------------|--------------------|-----------------|--------|---------------------|--------|
| | n (%) | n (%) | n (%) | | n (%) | |
| Total population | 25,424 (100) | 11,386 (44.8) | 10,878 (42.8) | | 3,160 (12.4) | |
| Male | 13,397 (52.7) | 6,016 (52.9) | 5,688 (52.3) | 0.4 | 1,693 (53.6) | 0.5 |
| 18-45 years old | 14,522 (57.2) | 6,420 (56.4) | 6,242 (57.4) | <.0001 | 1,860 (58.9) | 0.001 |
| White race | 21,697 (85.3) | 9,714 (85.3) | 9,302 (85.5) | 0.5 | 2,681 (84.8) | 0.4 |
| Psychiatric comorbidity | | | | | | |
| Depression | 4,730 (18.6) | 1,908 (16.8) | 2,056 (18.9) | <.0001 | 766 (24.2) | <.0001 |
| Anxiety | 4,824 (19.0) | 1,931 (17.0) | 2,076 (19.1) | <.0001 | 817 (25.9) | <.0001 |
| Bipolar disorder | 1,573 (6.2) | 775 (6.8) | 498 (4.6) | <.0001 | 300 (9.5) | <.0001 |
| SUD | 3,811 (15.0) | 1,971 (17.3) | 1,150 (10.6) | <.0001 | 690 (21.8) | <.0001 |
| Medication use | | | | | | |
| Anti-depressants | 4,179 (16.4) | 1,371 (12.0) | 2,016 (18.5) | <.0001 | 792 (25.1) | <.0001 |
| Anti-psychotics | 564 (2.2) | 203 (1.8) | 221 (2.0) | 0.2 | 140 (4.4) | <.0001 |

SUD = substance use disorder
† p-values represent comparisons between stimulant users vs no pharmacotherapy
‡ p-values represent comparisons between non-stimulant users vs no pharmacotherapy

Figure 2: Cumulative probability of suicidal ideation by medication group



RESULTS

Table 2: Adjusted Hazard Ratio (HR) for SI risk

| Characteristic | After IPTW |
|---|-----------------------|
| | Adjusted HR (95% CI) |
| Medication type [ref = No pharmacotherapy] | |
| Stimulants only | 0.75 (0.63 – 0.88)*** |
| Non-stimulants only | 1.24 (1.01 – 1.53)* |
| Psychiatric comorbidity | |
| Depression [ref=No] | 1.34 (1.07 – 1.68)* |
| Anxiety [ref=No] | 1.11 (0.88 – 1.40) |
| Bipolar disorder [ref=No] | 1.83 (1.46 – 2.30)*** |
| Substance use disorder [ref=No] | 1.65 (1.33 – 2.04)*** |
| Medication use | |
| Anti-depressants [ref=No] | 0.85 (0.67 – 1.06) |
| Anti-psychotics [ref=No] | 1.55 (1.12 – 2.15)* |

p<0.05*, p<0.01**, p<0.001***

LIMITATIONS

- The findings may have limited generalizability because the study population was predominantly White and non-Hispanic from West Virginia. Medication adherence was not assessed, and residual confounding by indication may have remained.

CONCLUSIONS

- Stimulant therapy was associated with a lower risk of SI among patients with ADHD, whereas non-stimulant therapy was associated with a modestly increased SI risk.² Psychiatric comorbidities were also associated with increased SI risk, highlighting the importance of individualized treatment and psychiatric monitoring when selecting ADHD pharmacotherapy.³

REFERENCES

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