Psychopharmacological Treatment in Very Young Children with Severe Psychopathology: A Descriptive Study of Use and Adverse Effects

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Background

- Psychotropic medication prescription rates for preschool-age children are steadily increasing[a], despite the extreme underrepresentation of this age group in medication literature, leading to reliance on studies in older populations[b].
- Preschoolers are generally at higher risk of adverse drug events (AE) due to psychotropic drug administration than school aged children, adolescents, and adults[c].
  - The incidence of AE related outpatient or emergency department visits are twice as much in children under 5 than those from age 5-17[c].
  - Preschoolers prescribed SSRIs experienced activation more frequently than older children, who experienced activation more frequently than adolescents (older children: 8-17%, adolescents: 1-3%)[d].
  - Preschoolers prescribed olanzapine experienced significant weight gain[c].
- A previous psychotropic medication descriptive study by our group found that fluoxetine was the most frequently AE-associated medication (41.2%), followed by stimulants (methylphenidate: 22.7%; mixed amphetamine salts: 21.4%)[e]. Sertraline was not associated with any AEs.

Study Aims

1. **Describe psychotropic medication use in an early childhood partial hospitalization program**
2. **Characterize parent-reported adverse events (AE) of antidepressants and antipsychotics**

Methods

Sample:

- 172 children (131 males)
- Age 36 to 95 months (mean = 66 ± 13)
- Admitted to an early childhood intensive psychiatric treatment program for serious emotional, behavioral, feeding, sleeping, and/or interpersonal issues.
  - Child Behavior Checklist (CBCL) Total Problems scores were significantly above the clinical cutoff (71.3 ± 9.7 [1.5-5 years], 70.5 ± 7.3 [6-18 years]).

Procedure:

- A **medication tracking form** was completed for each participant by a psychiatric nurse and reviewed by a board certified child and adolescent psychiatrist, documenting medication changes over the course of admission.
- A **retrospective chart review** was conducted to document parent-reported AE as reported to the program clinicians.

Figure 1. **Psychotropic medications started or adjusted on the program**

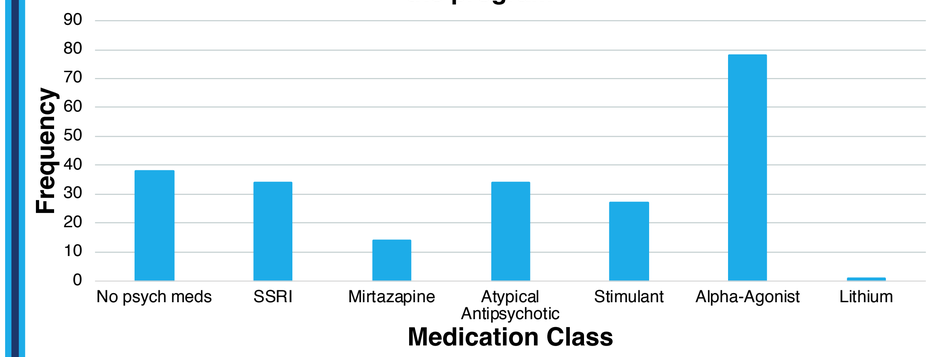

Figure 2. **Antidepressant and atypical antipsychotic prescriptions associated with one or more parent-reported AE**

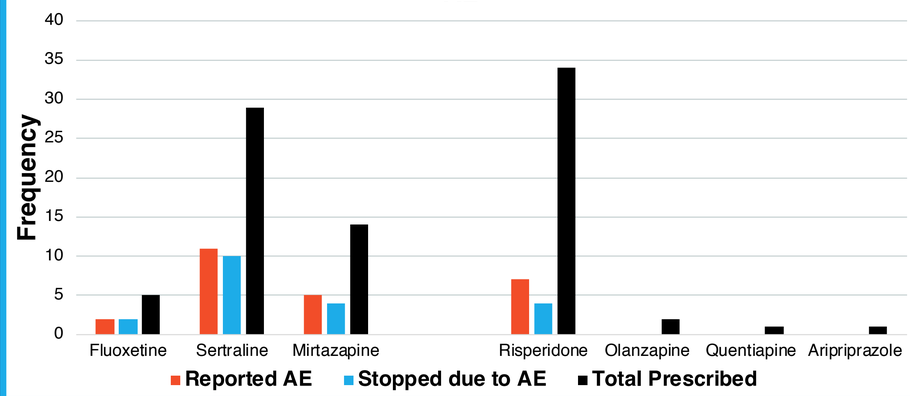

Table 1. **Specific parent-reported AEs as documented in chart review**

	Irritability, Anger, Aggression	Mood Lability	Impulsivity	Hyperactivity
Fluoxetine	1 (14.3%)	1 (14.3%)		
Sertraline	11 (37.9%)	2 (6.9%)	5 (17.2%)	1 (3.4%)
Mirtazapine	2 (14.3%)		2 (14.3%)	2 (14.3%)
Risperidone	2 (5.9%)		2 (5.9%)	

Results

- 78% of participants were prescribed psychotropic medications or melatonin during their partial hospitalization admission, and alpha-agonists were the most commonly prescribed (45.3% of participants).
- Participants were prescribed on average 1.64 ± 0.87 medications during their admission.
- 39.1% of participants prescribed an antidepressant experienced one or more AEs, and 88.9% of those with an AE had to stop taking the antidepressants as a result.
- Fluoxetine was the most common AE-associated antidepressant (40.0%), followed very closely by sertraline (37.5%) and mirtazapine (35.7%).
- Risperidone was the only atypical antipsychotic associated with AEs (20.6%), and was the AE-associated psychotropic agent least frequently with stopping the medication at 57.1% of the time.
- Irritability, anger, and aggression were the most common AEs reported by parents of the participants (51.6% of all reported AE's).

Discussion

- All antidepressants appeared to be associated with AE very frequently, supporting previous literature.
- Sertraline was significantly associated with AE in this sample, which does not support our group's previous research that did not find any AE associated with sertraline. We believe this is linked to the larger sample of participants taking sertraline in this follow-up study.
- Risperidone was discontinued only in 57.1% of the cases associated with AEs, suggesting that the associated AEs were not severe enough to warrant stopping the medication or that another medication was added to offset the AE.
- The significant frequency of AEs in all of these classes suggests that close medication management is crucial to psychiatric care for an acute preschool-aged population.

Limitations:

- The majority of participants were male, and all were admitted to one early childhood partial hospital program.
- The sample sizes of those taking these medications were relatively small, and limits the power of comparing AE frequencies among and between classes.
- This study design cannot adequately account for any AE-associated medication interaction.
- The parent-reported AEs overlapped with mood and behavior symptomatology presented at intake. Further longitudinal studies assessing physical AE with a larger amounts of participants would better support the link between these psychotropic agents and AEs.

Future Directions:

- A pilot study using a standardized method of AE reporting will be used to compare the frequency and type of AE's found in spontaneous and structured forms of reporting.

References

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