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### Pharmacogenetic Testing In Patients with Autism Spectrum Disorder Evaluated in the Children's Mercy Hospital GOLDILOKs© Clinic

Rachel Goodson

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# Pharmacogenetic Testing In Patients with Autism Spectrum Disorder Evaluated in the Children's Mercy Hospital GOLDILOKs® Clinic

Rachel Goodson, DO; Cy Nadler, PhD; Jennifer Wagner, MD; Sarah Soden, MD; Tracy Sandritter, Pharm.D., BCPPS; Jean Dinh, PharmD, PhD; Sarah Nyp, MD

## Children's Mercy Kansas City

### Background & Objectives

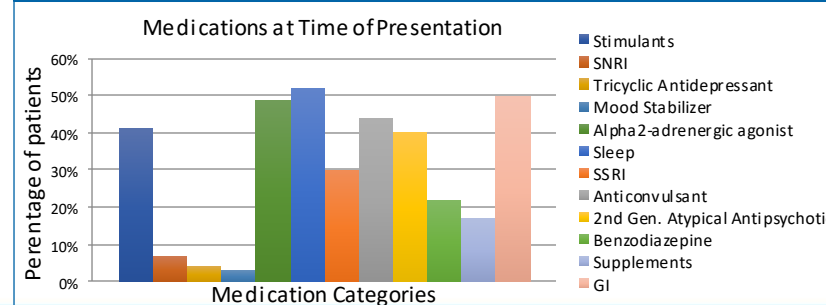
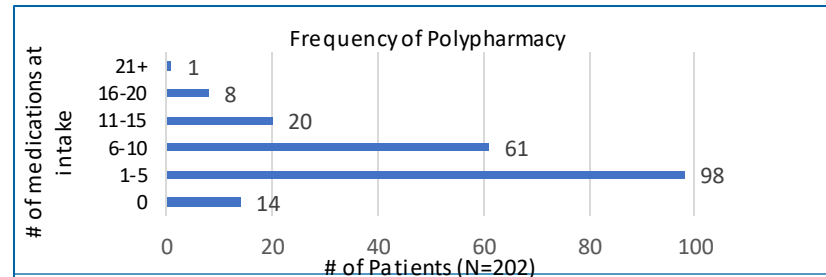
- Children with autism spectrum disorder (ASD) are more likely to be diagnosed with co-occurring mental health disorders and are also at increased risk for poor clinical response and adverse drug reactions
- No studies have investigated pharmacogenetic outcomes with patients with ASD
- Primary Objective:** Characterize the demographic, clinical, and genetic profiles of children with ASD presenting for personalized medicine services
- Secondary Objective:** Investigate the relationships between clinical phenotype and pharmacogenetic profiles

### Methods

- This is a retrospective, observational cohort study utilizing the GOLDILOKs® Clinic and Autism Clinic REDcap databases, electronic medical records, and previously completed pharmacogenetic testing results
- Inclusion Criteria:** Evaluation in the GOLDILOKs® clinic with documented diagnosis of ASD, autism, pervasive developmental disorder, or Asperger syndrome.

### Results

Sample (n = 202)	Number (N)	Percentage (%)
<b>Gender</b>		
Female	63	31.19
Male	139	68.81
<b>Race</b>		
White	168	83.17
African American/Black	18	8.91
Asian	4	1.98
Other	10	4.95
<b>Latino</b>		
Yes	4	1.98
No	198	98.02
<b>Referral Reason</b>		
Adverse Drug Reaction	98	48.51
Poor Medication Response	131	64.85
Genotype Results Review	5	2.48
Genotyping Requested by Physician	29	14.36
Genotyping Requested by Family	25	12.38
Other	44	21.78
<b>Referral Source</b>		
Primary Care Provider	34	16.38
Subspecialist	158	78.22
Self-Referral	10	4.95



### Conclusions

- At the time of referral, most patients were taking 1-10 medications (mean 6.15, SD 4.42, median 5)
- Sleep medications, medications targeting GI disorders, and alpha2-adrenergic agonists, anticonvulsants, and stimulants were among the most common medications taken at the time of evaluation
- Most patients were referred by subspecialists
- Primary referral reasons were adverse drug reactions and poor medication response

### Next Steps

- Conduct analysis with inclusion of a control group to evaluate for statistically significant differences
- Expansion to include phenotypic comorbidities and pharmacogenetic testing results
- Characterization of pharmacogenetic testing results and medications at the time of presentation with consideration of patient age, sex, and phenotype
- Multisite expansion of project to include individualized therapeutics clinics across the country for better generalizability

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GOLDILOKs®: Genomic and Ontogeny-Linked Dose Individualization and cLinical Optimization for Kids

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