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A Descriptive Examination of Medication Adherence in Adolescent Patients with Polycystic Ovary Syndrome (PCOS)

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Background

- PCOS is characterized by hyperandrogenism and menstrual irregularity in adolescents. Prevalence of depression and anxiety is increased in PCOS.¹
- Treatment entails healthy lifestyle changes in conjunction with medications such as the insulin sensitizer metformin, oral contraceptives, and antiandrogens.²
- The PCOS Clinic at Children's Mercy is led by a multidisciplinary team that provides medical care, dietary and lifestyle counseling, and mental health evaluation to adolescent girls
- Anecdotally, patients were not following their prescribed treatment regimen at follow-up.
- Objective: examine medication non-adherence and evaluate demographics and health differences between prescription adherent and non-adherent individuals.

Methods

- A secondary data analysis (n=50) was conducted on patients 13-18 years old diagnosed with PCOS between August 1, 2015 and December 31, 2020. Six were omitted due to lack of information on medication adherence (n=44).
- All subjects presented with signs of biochemical/clinical hyperandrogenism and irregular menses. Patients were divided into adherent and non-adherent groups based on provider documentation.
- Factors considered included race, ethnicity, medical history (psychiatric disorders [depression, anxiety], attention deficit hyperactivity disorder [ADHD], and gastrointestinal [GI] issues), and insurance coverage.
- Reasons for non-adherence across individuals were also noted.

Results

Table 1. Distribution of Caucasians and Non-Caucasians in medication adherent and non-adherent to pharmacologic treatment groups.

	Adherent	Non-Adherent
Caucasian (n=35)	22 (63%)	13 (37%)
Hispanic	7	6
Non-Hispanic	15	6
Unknown	0	1
Non-Caucasian (n=9)	4 (44%)	5 (55%)
Hispanic	1	0
Non-Hispanic	2	5
Unknown	1	0

Table 2. Race, ethnicity, and type of insurance coverage of PCOS patients included in secondary data analysis.

Race and Ethnicity	Insurance Coverage		
	Private	Public	Unknown
Caucasian, Hispanic (n=13)	2	10	1
Caucasian, Non-Hispanic (n=21)	15	6	0
Caucasian, Unknown (n=1)	1	0	0
African American, Non-Hispanic (n=6)	3	3	0
African American, Unknown (n=1)	0	1	0
Asian, Non-Hispanic (n=1)	1	0	0
American Indian/Alaskan Native, Non-Hispanic (n=1)	0	1	0

- Table 1 highlights 18 of 44 girls (41%) failed to comply with their prescribed metformin and/or oral contraceptive regimes at first follow-up.
- The majority of patients were Caucasian (35/44, 70%) and were more likely to be adherent (63%) vs. non-adherent (37%). Of the adherent Caucasians, 68% were non-Hispanic and 32% were Hispanic. Data revealed that all non-adherent patients were African American.
- No effect of insurance type (Table 2) or history of GI issues (Table 3) on adherence was seen.

Table 3. Prevalence of concurrent psychiatric disorder or GI issues amongst patients in treatment adherent and non-adherent groups at diagnostic visit.

	Past Medical History	
	Depression, Anxiety, or ADHD	GI Issue
Adherent (n=26)	8 (31%)	3 (12%)
Non-Adherent (n=18)	7 (39%)	0 (0%)

- Of the non-adherent group, 39% had a previously diagnosed psychiatric disorder or ADHD, in contrast to the 31% of the adherent group (Table 3).
- Further review of the non-adherent patients who attributed non-adherence to GI side effects (Table 4) revealed all were taking metformin and lacked baseline GI concerns. 5/8 (63%) had a past medical history of anxiety or depression.
- None of the girls who voiced one of the other top 4 most popular reasons (Table 4) for non-adherence had a psychiatric history.

Reason for Non-Adherence	# Complaints
GI side effects	8
Did not refill	3
Did not feel like medications helped	3
Reluctant parents	3
Forgot to take medication	2
Does not compliment lifestyle	2
Does not like taking pills	2
Metformin recall	1
Does not like getting periods	1
Began other medications	1
Rely on contraceptives	1
No comment	1

Table 4. List of reasons for not adhering to prescribed medication plan provided by patients.

Conclusion

- Medication adherence is a barrier to treatment to adolescents with PCOS. Non-adherence can contribute to menstrual irregularities and metabolic consequences, thus increasing the risk for comorbidities.²
- GI upset is a known adverse effect of metformin. Interventions to improve adherence, such as increased medication counseling regarding management of side effects is a possible intervention. Improving adherence among patients with a psychiatric disorder may be an additional focus point.
- Primary limitations are small group sizes and relative lack of racial diversity. More data is needed to explore the relationship of race and adherence with tailored interventions to remove barriers of care.

References

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- Pena, A.S., et al., Adolescent polycystic ovary syndrome according to the international evidence-based guideline. BMC Med, 2020. 18(1):72.