

# A Meta-Analysis Evaluating the Efficacy of Metformin versus Combined Oral Contraceptive in Adolescent diagnosed with Polycystic Ovary Syndrome

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## INTRODUCTION

Polycystic Ovary Syndrome is a common cause of endocrinopathy in premenopausal women and is seen adolescents in 1/200. Criteria for adolescent PCOS include otherwise unexplained combination of abnormal uterine bleeding pattern, and hyperandrogenism. Complications were identified in PCOS patients prompting the need for early diagnosis, treatment and ensuring early monitoring for metabolic complications. Due to lack of an approved therapy for adolescent, treatment options should both alleviate symptoms and decrease risk for comorbidities.

## OBJECTIVES

To determine efficacy of metformin versus combined OCP in risk indicators of adolescent patients diagnosed with PCOS based on available evidence from published studies.

## METHODS

SEARCH ITEMS: "Metformin", "Metformin Hydrochloride", "polycystic ovary syndrome", "Adolescent", "Polycystic"

DATA SOURCES: PUBMED, EMBASE, ScienceDirect

SELECTION CRITERIA: RCTs comparing metformin with OCP for PCOS in pediatric age

STUDY VARIABLES: PCOS endocrine and metabolic risk indicators

## RESULTS

Search yielded 3 studies, 70 total population of pubertal girls diagnosed with PCOS. Treatment of interest was metformin versus OCP. Results showed significant mean difference between metformin vs OCP in total testosterone (MD:7.92 95%CI 2.96 to 13.14 , p value 0.03) and BMI (MD: -2.27, 95% CI -3.61 to -0.93, p value <0.001).

## CONCLUSION

Metformin showed control of hyperandrogenism and decrease in BMI over OCP while no significant effect was seen in risk indicators such as insulin resistance, LDL, HDL and Total Triglycerides between groups.

## RECOMMENDATION

RCTs with larger sample size, focusing on optimal dose and combination treatment for managing PCOS symptoms may lead to better analysis on efficacy of treatment regimens.

## KEYWORDS

*Polycystic Ovarian Syndrome, Adolescent, Metformin, Oral Contraceptive Pills*