

# **36: PERIPHERAL 8-HYDROXYDEOXYGUANOSINE LEVELS AND MITOCHONDRIAL DNA COPY NUMBER DECREASE FOLLOWING METFORMIN TREATMENT IN WOMEN WITH POLYCYSTIC OVARY SYNDROME**

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## **Objective**

Long-term changes in 8-hydroxy-2-deoxyguanosine (8-OHdG) and mitochondrial DNA copy number (MtDNA), markers of oxidative stress, are evaluated in polycystic ovary syndrome (PCOS) in response to metformin use.

## **Design**

Size, Duration: This is a prospective cohort consisting of 86 patient who received metformin for 12 months.

## **Material and Methods**

PCOS patients were identified using the Rotterdam criteria from a university-based hospital. Patients were evaluated for anthropometric data, androgenic data, metabolic profiles, markers of inflammation and oxidative stress following 3, 6 and 12 months of metformin use. Changes in values were evaluated using the lineal mixed models.

## **Results**

Neither 8-OHdG and MtDNA were correlated to baseline body weight, age or insulin levels. Levels of 8-OHdG and MtDNA were also not correlated at baseline. Progressive decrease in both 8-OHdG and MtDNA were seen in patients with PCOS following metformin use. The levels of 8-OHdG were 34.62 (27.7-45.4), 31.94 (23.18-42.10), 29.96 (21.21-39.09), and 8.57 (12.14-31.15) at baseline, 3, 6, 12-months, respectively ( $p < 0.0001$ ), while levels of MtDNA were 55.38 (26.14-100.3), 34.78 (19.67-74.68), 33.42 (20.48-55.67), and 24.11 (17.16-66.13), respectively ( $p < 0.0027$ ).

## **Conclusions**

In this study, we demonstrate the both 8-OHdG and MtDNA decreased in patients with PCOS who received metformin for 12 months. This demonstrates that metformin is associated with improved oxidative profile in patients with PCOS.

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