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English session

E-1) Assessment of Advanced Glycation End Products in Infertile Women with and without Polycystic Ovary Syndrome: An Observational Study

Shinnosuke Komiya

HORAC Grand Front Osaka Clinic / Kansai Medical University Graduate School of Medicine,  
Department of OBGY

**Purpose:** To investigate the levels of percutaneous advanced glycation end products (AGEs) in women with and without polycystic ovary syndrome (PCOS) and evaluate their association with infertility.

**Materials and Methods:** This observational study recruited 146 infertile women from a single medical institution. Participants were divided into the PCOS group (42 cases) and the non-PCOS group (104 cases). The diagnosis of PCOS was made using the JSOG criteria. To ensure comparability between the two groups, matching was performed using age, and 42 cases in each group were included in the analysis. Percutaneous AGEs levels were measured by placing the medial forearm area against the measuring device and were compared between the two groups, along with HOMA-IR, total testosterone levels, and body mass index (BMI).

**Results:** The results showed a significant difference in percutaneous AGEs levels between the two groups (OR = 0.04, 95%CI: 0.007 - 0.07,  $p = 0.03$ ). However, there were no significant differences in HOMA-IR, total testosterone levels, or BMI ( $p = 0.27, 0.55, 0.41$ , respectively).

**Discussion:** This study showed that infertile women with PCOS had higher percutaneous AGEs than those without PCOS. However, there were no significant differences in factors such as HOMA-IR, total testosterone levels, or BMI, which suggests that these factors may not be involved in the differences in AGEs levels observed. Despite this, our study was limited by institutional bias, which may have affected the results. Further research is needed to validate these findings and to understand the association between PCOS and elevated percutaneous AGEs levels in Japanese infertile women. It should also be noted that PCOS cases in Japan may differ from those in the West due to cultural, genetic, and environmental factors. More studies are required to understand different populations.