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An Assessment of Demographics and Clinical Outcomes Among Patients with Gestational Diabetes with and without Diagnosis of PCOS, Nation-wide Study

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Abstract

Background: Polycystic ovarian syndrome (PCOS) is characterized by ovulatory dysfunction and signs and symptoms of hyperandrogenism. Gestational Diabetes Mellitus (GDM) develops in pregnant patients in whom endogenous insulin production is inadequate. There is limited evidence of clinical outcomes in patients with GDM with and without PCOS. Hence, we sought to investigate this population and their demographics.

Methods: We queried NIS between 2017-2020 for adult patients with GDM with and without PCOS. The primary outcome was length of stay (LOS) and total hospital charge. Secondary outcomes comprised mortality, cardiac arrest, use of mechanical ventilation, DKA and HHS. Multivariable logistic and Poisson regression analyses were used to estimate clinical outcomes.

Results: There were 1,240,605 hospitalizations with GDM and 20,579 (1.6%) had PCOS. PCOS and non-PCOS cohorts were with mean age of 32 vs 31.5 years; Caucasians 58% vs 43%; obesity 38.5% vs 18.8%; HLD 3.3% vs 0.6%; HTN 0.2% vs 0.1%; AF 0.1% vs 0.03%; HF 0.2% vs 0.1%; AKI 0.2% vs 0.1%; PE 0.4% vs 0.2%, respectively. Although PCOS cohort had significantly longer LOS and higher healthcare charges, mortality, cardiac arrest, HHS, and DKA did not significantly differ between the two cohorts and were extremely infrequent (10⁻³ order).

Conclusion: The PCOS group demonstrated significantly higher resource utilization but no significant difference in clinical outcomes. Patients were older, white, with more prevalent obesity, HLD, HTN, AF, HF, PE, AKI. PCOS is associated with cardiometabolic risk factors, and it increases the risk of adverse outcomes in patients with GDM. Further research is necessary to describe long-term outcomes in this population.