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Urinary volatile metabolomics as a viable alternative diagnostic tool for polycystic ovary syndrome: An exploratory hypothesis

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Abstract

Polycystic Ovary Syndrome (PCOS) is a **metabolic disorder** prevalent globally. **Female infertility** cases are also on the increase during the recent times which almost matches with the increasing incidence of PCOS. The NIH-USA-defined symptoms for clinical confirmation of PCOS include oligo-ovulation, elevated **androgen** level and presence of cysts in the **ovary**. Therapeutic approaches to PCOS require confirmatory diagnostics such as measurement of hormones and ultrasound scan of the ovary, which are in part, invasive. Conversely, the **volatile organic compounds** (VOCs) that are present in body fluids (urine, **feces**, **saliva**, etc.) and exhaled breath are reported to be endogenously altered in diseased state, which may be indicative of diseases including cancer. We hypothesize that the hindered metabolic state in PCOS condition would conditionally alter the VOCs that eventually are excreted in urine, which may offer a **template** to develop a viable and **non-invasive diagnostic** tool.



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Keywords

PCOS; Hormones; Urine; Volatile metabolomics; Biomarkers; Metabolic syndrome

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