Androgen-induced gut dysbiosis disrupts metabolism and endocrinal functions in PCOS

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Video Byte

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Abstract

Polycystic ovary syndrome (PCOS) is a common endocrine disorder in women and is characterized by irregular periods, infertility, and hirsutism. Patients with PCOS also regularly experience gut dysbiosis, but the specific role of dysbiosis in the pathology of PCOS is not clear. To investigate this, researchers administered two different treatments to rats – the androgen dehydroepiandrosterone (DHEA) to induce PCOS-like symptoms and antibiotics to deplete the existing microbiota and thereby produce “pseudo germ-free” rats. In the androgen-treated rats, depletion of the microbiota did not protect them from PCOS-like symptoms, but transplanting microbiota from androgen-treated rats into pseudo germ-free rats triggered disruption of reproductive hormone balance and altered liver metabolism. This preliminary animal study suggests that although microbiome changes due to increased androgens may aggravate the metabolic and endocrinal symptoms of PCOS, hyperandrogenism remains the primary pathogenic factor, and microbiota depletion cannot protect against it.