

Abstrak

Latar belakang:

Sindrom ovarium polikistik (SOPK) dijumpai pada 6–10% perempuan usia reproduksi dan menyebabkan 75–85% disfungsi ovulasi yang merupakan penyebab infertilitas, 20–40% kelainan metabolik dan kanker endometrium. Terapi utama SOPK adalah modifikasi gaya hidup yang mempunyai *compliance* yang rendah dan pemberian metformin sebagai terapi medikamentosa lini pertama non induksi ovulasi yang mempunyai banyak efek samping pencernaan. Pemberian prebiotik dengan propolis diharapkan dapat dapat memberikan alternatif terapi yang baru yang lebih mendekati patogenesis SOPK yaitu DOGMA dengan memodifikasi mikrobiota usus dengan efek samping minimal.

Metode: Penelitian RCT, *post-test only control group design* pada 30 tikus Wistar yang diinduksi dengan testosteron dan dibagi menjadi 5 kelompok yaitu kelompok K (kontrol), kelompok K- (SOPK), kelompok P1 (SOPK+metformin), kelompok P2 (SOPK+propolis) dan kelompok P3 (SOPK+metformin+propolis). Pemeriksaan yang dilakukan adalah analisis disbiosis mikrobiota usus, kadar serum *zonulin*, kadar TNF- α , HOMA-IR, kadar testosteron total, siklus anovulasi dan gambaran ovarium polistik.

Hasil: Disbiosis mikrobiota usus, kadar serum *zonulin*, kadar TNF- α , HOMA-IR dan siklus anovulasi antar kelompok berbeda tidak bermakna. Kadar testosteron total menurun pada kelompok P1 dan P2 ($p=0,025$ dan $p=0,010$). Gambaran ovarium polistik mengalami perbaikan pada kelompok P1 ($p=0,015$). Kadar gula darah puasa menurun pada kelompok P3 ($p=0,004$).

Simpulan: Pemberian ekstrak propolis mempunyai pengaruh yang sama dengan pemberian metformin dalam menurunkan kadar testosteron total. Kombinasi metformin dan propolis mempunyai pengaruh menurunkan kadar gula darah puasa namun tidak memperbaiki gejala klinis utama SOPK.

Kata Kunci: SOPK, disbiosis, mikrobiota usus

Abstract

Background: Polycystic ovary syndrome (PCOS) found in 6–10% of women of reproductive age and causes 75–85% of ovulatory dysfunction which leads to infertility, 20–40% of metabolic disorders and endometrial cancer. The main therapy for PCOS is lifestyle modification which usually has low compliance. Metformin treatment as a first-line non-ovulation induction medical therapy has many digestive side effects. Prebiotic administration with propolis can modify the intestinal microbiota with minimal side effects and can provide a new therapeutic alternative that closer to the pathogenesis of PCOS based on DOGMA theory.

Research Methods: This is a post-test only control group design randomized control trial with 30 Wistar rats divided into five groups: control (K), PCOS (K-), PCOS+ metformin (P1), PCOS+propolis extract (P2) and PCOS+metformin and propolis extract administration (P3). The examination including dysbiosis gut microbiota analysis, zonulin concentration, TNF- α concentration, HOMA-IR, total testosterone concentration, ovulation cycle and polycystic ovarian morphology.

Results: Gut microbiota dysbiosis, zonulin serum concentration, TNF- α levels, HOMA-IR and ovulatory cycles between groups weren't significantly different. Group P1 and group P2 were both had reduced total testosterone levels ($p=0.025$ and $p=0.010$). The P1 group had improvement of polycystic ovary morphology ($p=0.015$) and P3 group had reduced FBG ($p=0.004$)

Conclusion: Propolis extract and metformin treatment only had the same effect in reducing total testosterone concentration. Metformin and propolis combination treatment could reduce FBG but not clinical manifestation of PCOS.

Keywords: PCOS, dysbiosis, gut microbiota