

## 593: Metformin Ameliorates Endometrial Receptivity of Minimal/mild Endometriosis

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### Objective

Endometriosis reduce female fecundity, most of endometriosis-associated infertility was minimal or mild endometriosis according to r-AFS score. The decreased endometrial receptivity should be responsible for the pathogenesis. Metformin inhibited the growth of ectopic loci. However, the affect of Metformin on eutopic endometrium of minimal/mild endometriosis had not been reported. This study aims to identify whether metformin can ameliorate eutopic endometrial receptivity in infertile women with minimal/mild endometriosis.

### Design

This is a controlled trial to compare protein expression of eutopic endometrium of minimal/mild endometriosis patients after 2 months treatment of Metformin (1000mg/d).

### Materials and Methods

Total of 10 infertile women with minimal/mild endometriosis diagnosed laparoscopic were enrolled into the study, their secretory phase endometrium (10 pairs) were collected by simultaneously hysteroscopic curettage and Pipelle (Endometrial Suction Curette) after 2 months Metformin therapy (1000mg/d) (5 cases) or controls (5 cases). Protein expressions of eutopic endometrial tissues were analyzed by liquid chromatography coupled to tandem mass spectrometry (LC-MS/MS) based proteomics.

### Results

A total of 20 endometrial samples were analyzed. Compared to baseline, 149 differentially expressed proteins were detected in the endometrium after metformin therapy. Some transforming factors related with endometrial receptivity like insulin-like growth factor-binding protein 7 (IGFBP-7),  $\alpha$ -antitrypsin (AAT), apolipoprotein D (ApoD), Rho GDP-dissociation inhibitor 1 (Rho-GDI), brain form glycogen phosphorylase (PYGB) and Cathepsin B had up-regulated after metformin therapy ( $P < 0.05$ ); while the expressions of those protein had no significant change in controls.

### Conclusions

Our trials revealed that metformin, an insulin sensitizer, may ameliorate endometrial receptivity of eutopic endometrium of minimal/mild endometriosis in molecular aspects, that could be used as potentially novel therapy to improve the fecundity of infertile women with minimal/mild endometriosis.

### Support

None

### Disclosure

None