**Abstract**

**Research question:** Is there a difference in fibrin clot phenotype in women with endometriosis before and after ovarian stimulation?

**Design:** Prospective study including 73 infertile women in two age-matched groups: (i) with confirmed endometriosis (n = 29); (ii) without endometriosis (n = 44). Assessments of plasma fibrin clot permeability (Ks), efficiency of fibrinolysis using clot lysis time (CLT), along with thrombin generation (prothrombin fragments 1+2 [F1+2] and endogenous thrombin potential [ETP]) and fibrinolysis inhibitors were performed together with clinical pregnancy rate.

**Results:** Endometriosis was associated with increased thrombin generation, reflected by both higher F1+2 (+96.1%, P = 0.005) and ETP (+14.2%, P = 0.014) along with unfavourably altered fibrin clot properties represented by lower Ks (-31%, P < 0.001) and prolonged CLT (+13.5%, P = 0.02), compared with the non-endometriosis group. Moreover, women with endometriosis had higher plasminogen activator inhibitor-1 (PAI-1; +272%, P = 0.004) concentrations and alpha-2-antiplasmin activity (+39.9%, P < 0.001) in contrast to the other group. Ovarian stimulation led to reduction in F1+2 (-48.1%, P < 0.001), improvement of fibrin clot phenotype reflected by higher Ks (+25.9%, P < 0.001) and shortened CLT (-11.9%, P < 0.001), along with lower PAI-1 (-54%, P = 0.016) compared with the baseline in women with endometriosis.

**Conclusions:** Endometriosis is associated with the prothrombotic fibrin clot phenotype and increased thrombin generation. Ovarian stimulation favourably alters fibrin clot properties and leads to comparable pregnancy outcomes to those in women without endometriosis.