Iron overload-modulated nuclear factor kappa-B activation in human endometrial stromal cells as a mechanism postulated in endometriosis pathogenesis

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© 2015 American Society for Reproductive Medicine. Objective To evaluate the effect of iron overload on nuclear factor kappa-B (NF-κB) activation in human endometrial stromal cells (ESCs). Design Experimental study. Setting University hospital research laboratory. Patient(s) Ten healthy women. Intervention(s) Isolated ESCs from endometrial biopsies were incubated with 50 μM FeSO4 or vehicle. The NF-κB inhibitor [5-(p-fluorophenyl)-2-ureido] thiophene-3-carboxamide (TPCA-1), which inhibits IKKα, the kinase of IκBα (inhibitory protein of NF-κB), was used to prevent iron overload-stimulated NF-κB changes in ESCs. Main Outcome Measure(s) NF-κB activation was assessed by p65:DNA-binding activity immunodetection assay. IκBα, p65, and intercellular adhesion molecule (ICAM)-1 proteins expression was evaluated by Western blots. ESC soluble ICAM (sICAM)-1 secretion was measured by ELISA using conditioned medium. Result(s) Iron overload increased p65:DNA-binding activity and decreased IκBα and p6