

# Serum markers of oxidative stress in infertile women with endometriosis and controls

F.C. Donabela · A.Z. Andrade · J.K. Rodrigues · L.A. Dib · A.A. Jordão, Jr. · P.A. Navarro

[Affiliations & Notes](#) [Article Info](#)

**OBJECTIVE:** Oxidative stress (OS) has been implicated in the pathogenesis of infertility related to endometriosis. Little is known about the presence of systemic OS and its relationship with the stage of endometriosis. Thus, we compared five OS markers in the serum of infertile women with and without endometriosis.

**DESIGN:** Prospective study.

**MATERIALS AND METHODS:** We evaluated 127 consecutive infertile patients: 32 with endometriosis I/II, 22 with endometriosis III/IV and 73 controls (tubal and/or male factor). Peripheral blood samples were collected during the early follicular phase of the menstrual cycle for the analysis of total hydroperoxides (FOX<sub>1</sub>), advanced oxidation protein products (AOPP), and glutathione (GSH) determined by absorbance readings with a spectrophotometer. Total protein was determined by Labtest Kits.

**RESULTS:** AOPP levels were significantly higher and GSH levels were significantly smaller in women with endometriosis compared to controls. FOX<sub>1</sub> was significantly higher in women with endometriosis III/IV compared to endometriosis I/II and controls.

Variable	Endometriosis I/II	Endometriosis III/IV	Control
Total hydroperoxides (μMol/g pt)	8.3 ± 1.2a	9.7 ± 2.3b	8.4 ± 2.1a
AOPP (μmol/L)	125.9 ± 57.8a	137.6 ± 57.6a	97.0 ± 55.8b
Glutathione (nMol/L)	125.9 ± 57.8a	137.6 ± 57.6a	168.7 ± 52.4b

**Table 1**

Serum levels of oxidative stress markers of infertile women with and without endometriosis

Mean ± standard deviation. AOPP: advanced oxidation protein products. Different letters a,b,c in the same line indicate the presence of a significant difference (P < 0.05).

[Open table in a new tab](#)

**CONCLUSION:** We demonstrated a positive association between advanced endometriosis stage and increased serum levels of hydroperoxides, suggesting an increased production of reactive species in women with endometriosis III/IV. These data, taken together with increased levels of AOPP and decreased levels of GSH, suggest the occurrence of systemic OS in patients with infertility related to endometriosis.



Download PDF

[Outline](#) [Share](#) [More](#)