THE PERITONEAL FLUID OF INFERTILE WOMEN WITH AND WITHOUT MINIMAL/MILD ENDOMETRIOSIS REDUCES THE EXPRESSION OF GENES GSR AND CAT IN BOVINE OOCYTES

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Objectives: Enzymes of the antioxidant system such as superoxide dismutase 1 (SOD1), catalase (CAT) and glutathione reductase (GSR) seem to be important for the acquisition of oocyte competence. Thus, the objective of the present study was to assess the impact of peritoneal fluid (PF) from infertile women with minimal and mild endometriosis (EI/II), infertile control (IC, male and/or tubal factor of infertility), and fertile control (FC) on the expression of the genes SOD1, CAT and GSR in bovine oocytes matured in vitro in the presence of PF from patients of these three groups.

Materials and Methods: PF samples were obtained from 30 patients (10 with EI/II, 10 IC and 10 FC) during videolaparoscopy. Immature bovine oocytes were submitted to in vitro maturation (IVM) without the addition of PF and with the addition of 4 PF concentrations, and the relative expression of the genes SOD1, CAT and GSR was determined using real time PCR.

Results: A significant reduction in the expression of genes GSR and CAT was observed in groups EI/II and IC compared to FC.

Conclusions: There is lower expression of the genes GSH and CAT in bovine oocytes matured in vitro in the presence of PF from infertile women (with and without EI/II) compared to fertile women. Our results raise the possibility that infertility per se may be associated with impairment in antioxidant capacity of the oocytes, a fact that may compromise gamete quality even in women who apparently do not present factors of worsened oocyte quality.

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