We aimed to evaluate the frequency of the G-765C/rs20417 polymorphism in the COX2 gene and the gene expression in the endometrium of women with endometriosis. We performed a case-control study comprising 257 infertile and 30 fertile women diagnosed with endometriosis, and 302 fertile women as controls. Considering the COX2 in the endometrium, we considered 28 infertile women with endometriosis and 19 controls. Genotyping was performed using the HRM methodology by PCR real-time. The expression of GAPDH and COX2 was measured using the qRT-PCR methodology. The genotype and allele distribution was similar in both infertile (p=0.718; 95% CI, 0.69–1.27) and fertile women (p=0.054; 95% CI, 1.03–3.36) with endometriosis and in the control group. The genotype distribution according to the stage of the disease (I/II and III/IV) were similar (p=0.729; 95% CI, 0.75–1.57); (p=0.920; 95% CI, 0.68–1.37), respectively. For the expression of the COX2 gene, the results are in mean value and standard deviation 31.34 (30.28–32.40); 32.31 (31.40–33.22) respectively, showing no statistical significance (p=0.161). The presence of G-765C/rs20417 polymorphism in the COX2 gene is not associated with either the presence or the stage of endometriosis. The expression in the endometrium did not differ between the case and control groups, as well as the stage of endometriosis.

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