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The occurrence of fetal microchimeric cells in endometrial tissues is very common phenomenon in benign uterine disorders and the lower prevalence of fetal microchimerism is associated with better uterine cancer prognoses

Fetální mikrochimérismus v endometriální tkáni u benigních a nádorových onemocnění děložního těla

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Aims: This is the first study carried out to describe the role of fetal microchimerism (FM) in the pathogenesis of uterine cancer. The prevalence and concentration of male fetal microchimeric cells (FMCs) were examined in endometrial tissues in relation to subtypes of uterine cancer, and the histological grade and stage of the tumor. FM occurrence was analyzed in relation to risk factors including hypertension, obesity, type 2 diabetes, dyslipidemia, age at cancer diagnosis and patient pregnancy history. The prevalence and concentration of FMCs were examined in endometrial tissues using real-time polymerase chain reaction, SRY and β-globin sequences as markers for male fetal FMCs and total DNA. The studied group involved 47 type 1 endometrial cancers, 28 type 2 endometrial cancers and 41 benign uterine diseases.

Results: While the prevalence of FM was decreased only in type 1 endometrial cancer, compared to benign uterine disorders (38.3% vs.70.7%; OR = 0.257, 95% CI: 0.105 to 0.628, p = 0.003), FMC concentrations did not differ within examined groups. The lower FM prevalence was detected in low grade (grade 1 and grade 2) endometrioid cancer (38.3% vs. 70.7%, OR = 0.256, 95% CI: 0.105 to 0.627, p = 0.003) and in FIGO 1 tumors (40.7% vs. 70.7%, OR= 0.285, 95% CI: 0.120 to 0.675, p = 0.004). No correlation between FM prevalence or FMC concentrations and risk factors was demonstrated.

Conclusions: A lower prevalence of male FM seemed to be associated with better prognoses in uterine cancer based on tumor subtype, histological grade and stage of the tumor.

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