

Effect of plasma status of folate on HPV infection and progression to cervical cancer

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Introduction: Persistent infection by human papillomavirus (HPV) is associated with cervical carcinogenesis. However, only the presence of HPV is insufficient for complete malignant transformation. Cofactors, such as prolonged use of oral contraceptives, multiparity, early onset of sexual activity, multiple partners, smoking, other sexually transmitted infections and nutritional factors, as low levels of folate, may be required for progression of viral infection to cancer. The role of micronutrients in malignant transformation of cervical tissue is controversial. **Objectives:** To evaluate the relation of plasma folate concentrations with persistence of HPV infection and the presence of cellular changes in women living in Ouro Preto, MG. **Methods:** Were selected 95 women who had their blood sampled for determination of folate and cervical material for research of HPV, by polymerase chain reaction (PCR) using primers MY09 and MY11, and cellular changes, using the technique of Pap. **Results:** HPV infection was detected in 57.9% of the group. The most prevalent viral type was HPV 16 (50%) and 48.5% of infections were considered by types of high oncogenic risk. Atypical cells were detected in 10.5% of the group, and the low-grade squamous intraepithelial lesion (LSIL) the most prevalent one (50%). Initially, the average concentrations of folate in the group was low (2.95 ng / ml \pm 1.42). Altered plasma levels of folate were detected in 60% of women who showed atypical cells and 56.4% of HPV-infected ones. In relation to the oncogenic risk of viral types, 71% of participants with HPV infection of high risk had low levels of folate. However, there weren't statistically significant associations between plasma levels of the micronutrient and cellular atypia, HPV infection and risk of oncogenic HPV types. The patients with altered plasma levels of folate were referred to a nutritionist to correct this deficiency. After dietary treatment, all women had plasma levels of folate standardized, indicating the effectiveness of the diet. The mean plasma concentrations of folate in the second time was 10.029 ng/ml \pm 4.385. The analysis of viral persistence showed that 40% of women had remission of HPV infection. The atypical cells, which show the progression of infection to cancer, were more prevalent in women who showed persistent viral infection (30.4%). **Conclusion:** This study showed significant remission of HPV infection after correction of plasma levels of folate.

Keywords: Folate, cervical cancer, HPV.

Financial support: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).