Oxidative Imbalance and Risk Factors Involved in Premalignant and Malignant Lesions of the Uterine Cervix.

Danay Heredia Ruiz[1], Manuela Herrera Martínez[1], Douglas Fernández Caraballo[1], Lázara Gladys López Ocampo[2], Luis Alfredo Estévez Cobo[3], Sergio Santana Rodríguez[3], Emilio González Rodríguez[4]

[1] University of Medical Sciences of Villa Clara.

[2] Chiqui Gómez Lubián" Polyclinic of Santa Clara.

[3] Celestino Hernández Robau" Hospital of Villa Clara)

[4] Central University "Marta Abreu" of Las Villas)

Introduction: There is an oxidative imbalance in the cases due to the decrease of the antioxidant enzymatic system where glutathione levels contribute to the increase of lipid peroxidation.

Objective: To determine indicators of oxidative stress and risk factors in patients with premalignant and malignant lesions of the uterine cervix.

Materials and methods: A total of 120 women were studied: 30 with Cervical Intraepithelial Neoplasia (CIN) I, 30 with CIN III, 30 with stage IIB epidermoid carcinoma and 30 with negative cytology taken as control, from the gynecology out patients service of "Chiqui Gómez" Polyclinic and the Oncology Service of "Celestino Hernández" Hospital of Santa Clara, with ages between 19 and 65 years. Information on the risk factors was obtained through an individualized interview, and the levels of enzymes superoxide dismutase and catalase as well as reduced glutathione and malonidialdehyde concentrations as indicators of oxidative stress were determined by spectrophotometric techniques. The comparison and association between groups was carried out with the support of the statistical program SPSS.

Results: The levels of antioxidant enzymes showed a non-significant decrease in three groups of cases, reduced glutathione decreased significantly in CIN III (p=0,043) and epidermoid carcinoma (p=0,036) groups, while malonildialdehyde increased significantly in the same groups (p<0,01) with respect to the controls. Risk factors with greater incidence in affected women were the exposure to the papilloma virus due to the early

sexual contact, the number of sexual partners, the use of oral contraceptives and the habit of smoking.

Conclusions: There is an oxidative imbalance in the cases due to the decrease of the antioxidant enzymatic system where glutathione levels contribute to the increase of lipid peroxidation. It also confirms the association between risk factors and the development of premalignant and malignant lesions in the uterine cervix.

Keywords: glutathione levels, lipid peroxidation, uterine cervix epidermoid carcinoma.