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The role and utility of matrix metalloproteinase as predictors of cervical cancer lesions progression

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Cervical cancer is the third most prevalent type of cancer among women worldwide. Cervical human papillomavirus (HPV)'s infection and persistence are essential factors for this type of disease. Nevertheless, HPV infection alone is not sufficient to cervical pathogenesis, as other necessary cofactors related to the activation of some intracellular and extracellular mechanisms are required to trigger and continue the progressive process of cervical lesions. One of these cofactors is the active role of matrix metalloproteinase (MMP), a family of endopeptidases able to degrade both extracellular matrix components and the basement membrane, and to induce tumor growth factors. These combined actions leads therefore to invasion and metastasis. Despite the extensive literature on MMPs, there is a paucity of studies on the specific MMPs mechanisms in cervical lesions, and its association with high-risk HPV oncoproteins. MMPs are important for their role in carcinogenesis, as well as potential predictive biomarkers for detection and prognosis of cervical lesions. This is due to the fact that intraepithelial lesions overexpressing certain types of MMPs tend to progress to invasion. Material for analysis of MMPs can be obtained by cytological brush at the time of the Pap smear collection, as well as colposcopy and biopsies. Further studies on the frequency of MMP genes' polymorphisms can also serve as an additional tool for predictive analysis among patients with cervical intraepithelial lesions.

Biography

Jacinto da Costa Silva Neto was 23 years old when he completed his degree. He has an MSc in biophysics, a specialist in cytopathology at the Federal University of Pernambuco and a PhD from the University of São Paulo-USP. Currently, he is a visiting Professor at McGill University, Department of Oncology - Faculty of Medicine - Division of Cancer Epidemiology. Activities Federal University of Pernambuco-UFPE/Brazil: Professor, Coordinator of the Cytopathology sector, coordinator of postgraduate cytopathology, Professor/Supervisor of the Postgraduate Program in Pathology-POSPAT/UFPE, and Professor/Supervisor of the Postgraduate Program in MorphoTechnology/UFPE. Lines of research: cancer (biomarkers and carcinogenesis), and Human Papillomavirus (HPV).

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