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Purinergic system and chronic inflammatory effects in melanoma patients

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Statement of the Problem: The incidence of skin cancer has been globally alarming, representing a serious public health problem, where Cutaneous Melanoma (CM), is considered the most serious due to its high metastasis capacity. In the CM milieu, has a metabolic process deregulation with the involvement of purinergic system enzymes. Considering that, this enzymatic chain present in all immune and vascular cells, has an important role in the control or promotion of inflammation in tumors. Then, the aim of this work was to analyze and clarify the role of adenine nucleotides and adenosine as well as the role of interleukins in the pathophysiology of CM and a possible mechanism of recurrence and metastasis.

Methodology & Theoretical Orientation: The samples consisted of 23 patients with CM and 23 healthy subjects. The Human Ethics Committee of Federal University Frontier South approved the protocol under number 822.782.

Findings: Our results showed for the first time, that the inhibition of extracellular ATP hydrolysis, evidenced by significantly decrease on purinergic enzyme activities, lead to accumulation of ATP extracellular. The presences of high ATP levels in the post-surgery CM microenvironment suggested being the cause of deleterious changes, which are evidenced by the uncompensated inflammatory profile. Patients with CM are treated with surgical excision, but recurrences and metastases are common with a relapse rate between 50% and 80%. These recurrences and metastases can be the result of changes that remain even after its removal.

Conclusion & Significance: The modifications observed in this study may reflect the CM microenvironment alterations, whereas, after removal of the tumor, they can represent high CM aggressiveness. Besides this understanding, the interaction between tumor cells and the immune suppression of anti-tumor immunity will help provide insights that will allow the introduction of future novel therapeutic approaches for the management of patients with melanoma.

Biography

Aline Manica has her expertise in biochemistry and metabolic and oncological diseases. Her work shows the changes caused by this cancer that can remain even after surgical removal, especially by the inflammatory profile, which are being in favor of relapses and metastases. The data's demonstrated in her study will help provide insights that will allow the introduction of future therapeutic approaches for the management of patients with melanoma.

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