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Therapeutic impact of EMAP II and CD13 expression in colorectal cancer

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Statement of the Problem: Colorectal cancer (CRC) is the third most commonly diagnosed cancer and a major cause of cancer mortality in the world. Despite advances in CRC treatment, a greater proportion of patients, highlighting the need for new immunotherapy. Endothelial monocyte-activating polypeptide-II (EMAP-II) is a multifunctional cytokine with pro-inflammatory properties. Aminopeptidase N (CD13) is a zinc-binding protease that has a role in cancerogenesis. It is proposed that both EMAP II and CD13 are involved in tumor progression and metastasis. The purpose of this study is to develop a novel immunotherapy expressing anti-EMAP and anti-CD13 antibodies in CRC.

Methodology & Theoretical Orientation: Expression of both EMAP II and CD13 was studied in CRC patients by immunohistochemistry, flow cytometry and ELISA. The antitumour effect of the anti-EMAP II and anti-CD13 antibodies was verified by therapeutic animal experiments *in vivo*.

Findings: There was a positive correlation between CD13 and EMAP II expression in CRC with accordingly decline in CD4 and CD8 cells. Coculture of peripheral T cells with recombinant EMAP II caused a significant increase in CD13+ T cells in comparison to control ($P<0.001$). In an animal model, an administration of anti-EMAP II and anti-CD13 antibodies resulted in extension of the survival of the mice compared to the untreated group. Furthermore, novel immunotherapy decreased CD13+T cells and increased CD4-positive T cells, CD8-positive T cells, NK cells. Furthermore, novel immunotherapy decreased the tumour-induced apoptosis of T cells.

Conclusion & Significance: This study has demonstrated a novel promising tumour immunotherapy for CRC.

Biography

Manal Saber has completed her PhD from Nottingham University. She is an Associate Professor of Clinical Pathology, Minia University, Egypt. She has published papers in peer reviewed journals and has been serving as an editorial board member of others.

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