

EFFECTS OF CONVENTIONAL TREATMENTS ON DENDRITIC CELLS IN COLORECTAL CANCER PATIENTS

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Since dendritic cells (DCs) have a role in anticancer immunity, we investigated the effects of metastasis, surgery and chemotherapy on DC dynamics in colorectal cancer (CRC) patients, by analyzing either circulating DC or monocyte-derived-DCs (MoDCs).

Metastatic or non-metastatic CRC patients had significantly reduced DC subsets compared to healthy subjects ($p<0.001$). These cells were significantly higher in metastatic than in non-metastatic patients. MoDCs were significantly lower in metastatic than healthy and non-metastatic subjects ($p<0.001$).

Surgically-treated patients had nearly one-half circulating DC subsets compared to healthy subjects ($p<0.001$) while no difference was found between unoperated and healthy subjects. MoDCs obtained from tumor-bearing patients were significantly higher than in operated subjects. In both cases MoDCs were significantly lower than in healthy subjects ($p<0.001$).

Circulating DCs and MoDCs were significantly lower in CRC patients, with or without chemotherapy, compared to healthy subjects ($p<0.001$). Chemotherapy-treated patients had 30% fewer DC subsets and lower MoDCs compared to untreated ones.

When we considered a combination of different therapies, we found that CRC patients without any treatment showed the highest number of circulating DCs compared to treated patients. Patients who underwent only CRC resection had the lowest number of circulating DCs but, conversely, the best ability to obtain MoDCs.

In conclusion the identification and enumeration of circulating DC subsets may provide insight into the immune system status of CRC patients which may be important for an appropriate pharmacological treatment. Moreover the analysis of MoDCs and their maturation state may be crucial to the identification of possible candidates for DC-based immunotherapy.