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**Myeloid-derived suppressor cells in gastrointestinal cancers: A systemic review**

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### Abstract

Gastrointestinal (GI) cancers are one of the most common malignancies worldwide, with high rates of morbidity and mortality. Myeloid-derived suppressor cells (MDSCs) are major components of the tumor microenvironment (TME). MDSCs facilitate the transformation of premalignant cells and play roles in tumor growth and metastasis. Moreover, in patients with GI malignancies, MDSCs can lead to the suppression of T cells and natural killer cells. Accordingly, a better understanding of the role and

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Myeloid-derived Suppressor Cells (MDSCs) In Gastrointestinal Cancers

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Myeloid-derived suppressor cells (MDSCs) are a **diverse population of immature myeloid cells** with immunosuppressive properties that accumulate under pathological conditions including specific types of cancer and infections. Two primary subsets of human and mouse MDSCs known as granulocytic and monocytic MDSCs have been identified.

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Considering key roles of myeloid-derived suppressor cells (MDSCs) in the immunosuppression network, levels of MDSCs in patients with cancer are assumed to be of prognostic and predictive value. In this systematic review, we aimed to evaluate the clinical relevancy of MDSCs and their relationship with clinical features and prognosis of **GI malignancies** in patients with GI cancers.

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Dec 05, 2018 · Myeloid-derived suppressor cells (MDSCs) is a **heterogeneous population of immature myeloid cells, inhibiting both the innate and adaptive immunity**. Recent studies validated that MDSCs caused immune suppression and promoted cancer progression through various mechanisms. However, the prognostic value of MDSCs in cancer remains controversial.

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## [Hepatic myeloid-derived suppressor cells in cancer](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6309820)

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They are composed of a heterogeneous population of immature myeloid cells that abrogates innate and adaptive immune responses. Myeloid-derived suppressor cells **accumulate not only in peripheral blood, secondary lymphoid organs and tumors**, but also in the liver in preclinical tumor models and in hepatocellular carcinoma patients.

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Srivastava, M.K. **Myeloid-derived suppressor cells** inhibit T-cell activation by depleting cystine and cysteine. *Cancer Res.* 2010, 70, 68–77. [Google Scholar] Fletcher, M. l-Arginine depletion blunts antitumor T-cell responses by inducing **myeloid-derived suppressor cells**. *Cancer Res.* ...

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Myeloid Derived Suppressor Cells (MDSCs) and T-cell suppression. MDSCs are **immature myeloid cells** originating **in the bone marrow** that are recruited to the tumor microenvironment through production of various tumor derived factors (TDFs). These chemokines and cytokines stimulate the production of myeloid precursors in the marrow, and facilitate their recruitment and accumulation within the tumor ...

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## Myeloid-derived Suppressor Cell

MDSC (myeloid-derived suppressor cells) are a heterogenous group of immune cells from the myeloid lineage (a family of cells that originate from bone marrow stem cells). MDSCs strongly expand in pathological situations such as chronic infections and cancer, as a result of an altered haematopoiesis. MDSCs are discriminated from other myeloid cell types in which they possess strong immunosuppressive activities rather than immunostimulatory properties. Similar to other myeloid cells, MDSCs interact with other immune cell types including T cells, dendritic cells, macrophages and natural killer cells to regulate their functions. Although their mechanisms of action are not clear yet, clinical and experimental evidence has shown that cancer tissues with high infiltration of MDSCs are associated with poor patient prognosis and resistance to therapies. MDSCs can also be detected in the blood. In breast cancer patients, MDSC levels in the blood are about 10-fold higher than normal.

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