

## Angiogenesis

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Angiogenesis is a complex process leading to the formation of new vessels. Increased angiogenesis has been associated with malignant cell growth, survival, metastatic spread and consequently aggressive disease behaviour. In this special issue of *MEMO*, we are happy to offer the readers five articles written by experts in their respective fields presenting the current knowledge of angiogenesis in haematological malignancies and urological malignancies.

In haematological malignancies, an increased neovascularization in the bone marrow was proven by different methods like immunohistochemical vessel staining as well as by studying angiogenic cytokines expression or production. Therefore, three detailed review articles will initially present the existing knowledge on the biologic role of angiogenesis in multiple myeloma (MM), myeloproliferative neoplasms (MPN) and acute myeloid leukaemia (AML). Steiner et al. [1] report about new therapeutic strategies in MM, according to which nearby cytotoxicity also show strong anti-angiogenic activity, thereby influencing the bone marrow microenvironment. Medinger and Passweg [2] summarize the recent advances in the basic understanding of MPNs, focusing on the discovery of important driver mutations (JAK2, CALR) and the pathophysiological link to an increased angiogenesis in these diseases. Wellbrock and Fiedler [3] summarize current concepts of regulation of leukaemic stem cells in the bone marrow's endosteal and vascular niches and potential therapeutic targets in AML combinational therapy.

Also in urological malignancies, anti-angiogenic therapies are attractive concepts and already incorporated in the daily uro-oncological practice as reported by Leonhartsberger [4] in renal cell cancer. However, in castration-resistant prostate cancer (CRPC), until now, no anti-angiogenic

therapy is approved, and therefore, Heidegger et al. [5] discuss critically the results and limitations of performed studies with anti-angiogenic agents in CRPC.

All five articles provide an up-to-date review of the research and literature about tumour angiogenesis in these tumour entities. Therefore, we hope that this special issue will help the readers to understand the underlying complex biology and challenges in developing successful anti-angiogenic therapies.

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