THE CORRELATION BETWEEN IMPROVING TUMOR MICROENVIRONMENT AND RADIOSENSITIZATION

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Radioresponse is influenced by factors extrinsic to cancer cells. Endothelial cells and infiltrating immune cells within the tumour microenvironment are the two components that significantly affect the outcome of radiotherapy. The benefits of fractionated radiotherapy are reduced by up-regulation of hypoxia inducible factor-1α (HIF-1α) and vasculoendothelial growth factor (VEGF). Further, the therapeutic effect of anti-angiogenic agents is counteracted by the mobilization of endogenous proangiogenic cells into the tumour microenvironment. In addition to endothelial cells, immune cells play an important role in the microenvironment that regulates tumour growth and response to therapy. In this review, we highlight some of the recent studies on the importance of immune cells in the microenvironment. The progress in developing combinations of radiotherapy and immunotherapy or other methods for modulation of the tumour immune microenvironment may yield fruitful results in the near future.

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