Angiogenesis inhibitors in early development for gastric cancer

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Abstract:

Angiogenesis, or the generation of new blood vessels from pre-existent ones is a critical process for tumor growth and progression. Hence, the development of angiogenesis inhibitors with therapeutic potential has been a central focus for researchers. Most angiogenesis inhibitors target the Vascular Endothelial Growth Factor (VEGF) pathway, however a number of tyrosine kinase inhibitors (TKIs), immunomodulatory drugs (IMiDs) and inhibitors of the mammalian Target-Of-Rapamycin (mTOR) pathway also display antiangiogenic activity. Areas covered: Here we review the effectiveness of a variety of compounds with antiangiogenic properties in preclinical and clinical settings in gastric cancer (GC). Expert opinion: In coming years angiogenesis will remain as a therapeutic target in GC. To date, ramucirumab, a monoclonal antibody that targets VEGFR2 is the most successful antiangiogenic tested in clinical studies, and it is now well established as a second-line therapy in GC. The arrival of precision medicine and the success of immune checkpoint inhibitors will increase the number of clinical trials using targeted agents like ramucirumab in combination with immune checkpoint inhibitors. A hypothetical working model that combines ramucirumab with immunotherapy is presented. Also, the impact of nanotechnology and a molecular subtype classification of GC are discussed.

Keywords: Angiogenesis||Antiangiogenesis||Checkpoint inhibitors||Gastric cancer||Nivolumab||Pembrolizumab||Ramucirumab.
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