Morphological features and clinical significance of different types of tumor vessels in Gastric and Breast Cancer

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Purpose: To study the features of morphology and clinical significance of different types of tumor vessels in gastric (GC) and breast cancer (BC).

Material and methods: Tumor samples of 73 patients with GC and 59 patients with BC were stained with Mayer's hematoxylin and eosin and immunohistochemically, using antibodies to CD34.

Results: The following types of tumor vessels and structures with endothelial lining were identified: normal capillaries, dilated capillaries (DCs), atypical DCs (ADCs), "cavitary" structures type-1 (CS type 1) – the structures with partial endothelial lining and "cavitary" structures type-2 (CS type-2) – the distinctive cellular structures in peritumoral stroma. The ADCs, CS type-1 and CS type-2 most significantly correlated with the clinical features of GC and BC. In GC the multiple CS type-1 and ADCs were associated with T3-4 ($p = 0.001$) and N2 ($p = 0.001$) stages and with a decrease of overall survival from 93.9% to 52.7% ($p = 0, 0013$) and relapse-free survival from 87.7% to 32.4% ($p = 0.0001$); in BC - with estrogen receptors negative status ($p = 0.03$), with the presence of tumor emboli in vessels ($p = 0.08$) and with a decrease of relapse-free survival from 85.7% to 56.2% ($p = 0.046$). As for the CS type-2, these structures were more often detected in diffuse type of GC ($p = 0.07$). In BC the CS type-2 were more often observed in positive Her2/new status ($p = 0.008$).

Conclusion: In GC and BC the tumor vessels are heterogeneous in morphology and clinical significance.

Speaker Biography

Marina Senchukova has completed her PhD at the age of 36 years from Orenburg State Medical Academy and Grand PhD in Medical sciences at the age of 53 years from Orenburg State Medical University. She is the professor of the Oncology Department of Orenburg State Medical University. She has coauthored over 100 publications including Journal of Cancer, Springerplus, Current Angiogenesis, Morfologiia (Russia), Voprosy Onkologii (Russia) and others. She holds six patent of Russian Federation. The current main research interests include: mechanisms of tumor angiogenesis, epithelial-mesenchymal transformation, role of inflammation in tumour progression.

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