Fakultät für Medizin

Dokumenttyp: journal article

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Titel des Beitrags: Tumor metabolism to blood flow ratio in pancreatic cancer: helpful in patient stratification?

Abstract: Evaluation of: Komar G, Kauhanen S, Liukko K et al.: Decreased blood flow with increased metabolic activity: a novel sign of pancreatic tumor aggressiveness. Clin. Cancer Res. 15(17), 5511-5517 (2009). Novel methods in assessing pancreas cancer vascularization and metabolism are urgently needed for pretherapeutic patient stratification. Recently, noninvasive quantification of blood flow and metabolic activity of pancreatic tumors using [(15)O]H(2)O and [(18)F] fluorodeoxyglucose positron emission tomography/computed tomography imaging has been demonstrated to be a promising approach to assess these parameters. This also implied that high tumor metabolism and low blood flow (and thus probably also low tissue oxygenation) are linked with an aggressive cancer phenotype, and potentially reflect treatment resistance. Furthermore, such functional imaging might prove clinically that pancreatic cancer differs from other gastrointestinal cancer in its desmoplastic reaction and hypovascularity, which might well explain the enormous heterogeneity in treatment sensitivity. Therefore, determination of the metabolism to blood flow ratio could help in the decision on which (additional) chemotherapies or targeted agents to administer to a particular patient. Chemoresistance in pancreatic cancer might thus be regarded, at least in part, as a result of low drug delivery to the tumor cells, which is a
consequence of a hypoxic environment contributing to the stromal reaction, rather than epithelial tumor cell resistance itself.