

Upper abdominal stopflow perfusion- the surgical technique behind locally high drug concentrations

K.R. Aigner, S.Gailhofer, E.Selak, K.Aigner
Medias Klinikum Burghausen, Germany

Background: For pancreatic cancer, especially with peritoneal carcinosis, high drug concentrations are needed to achieve a response. An isolated treatment of the tumor site with adequate drug concentrations is eligible.

Methods: We developed a new technique, upper abdominal perfusion (UAP) with stopflow balloon catheters in aorta and vena cava. UAP enables high local drug concentrations at the tumor site while keeping systemic drug concentrations next to zero. UAP is a method performed in two steps, where the first step is the stop-flow procedure and the second step is the isolated hypoxic abdominal perfusion. Both steps are performed with stop-flow balloon catheters in the vena cava and aorta. For the first step (stop flow), the aortic balloon is positioned beneath the celiac trunc and above it, the chemotherapy is infused for one minute while an outflow-block of the liver veins is temporarily established by inflating the venous balloon beneath the diaphragm. Thereafter, the aortic balloon is immediately slipped upstream in the aorta and placed right beneath the diaphragm (second step). The isolated hypoxic abdominal perfusion runs for 10 minutes with high drug concentrations in the whole abdominal region.

Results: For stage III pancreatic cancer, median survival rates of 13 months and 21.5 months were reached for UAP and UAP/TACE treatment. For stage IV pancreatic cancer with up to five distinct metastatic sites and peritoneal carcinosis, median survival of 8 months was reached with UAP.

Conclusion: Upper abdominal perfusion is a feasible technique for advanced staged, unresectable cancer, even if highly metastasized including peritoneal carcinosis.