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# Pancreatic Cancer: Regional Treatment Could be the Breakthrough

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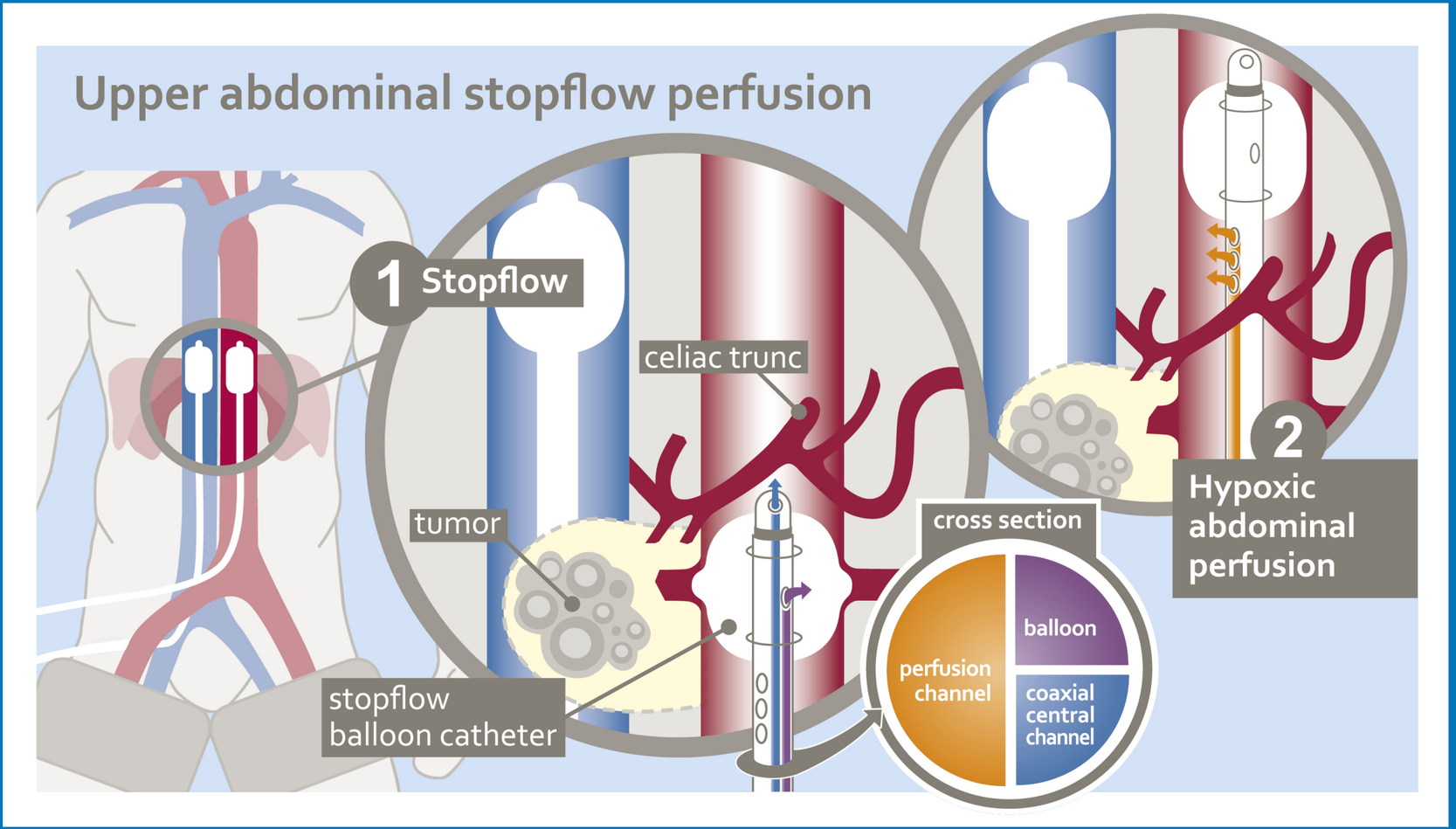
**Background:** The treatment of pancreatic carcinoma remains a challenge as prognosis is poor, even if confined to a single anatomical region. High drug concentrations at the tumor site can result in good response, but the unaffected parts of the body tolerate only low exposure to drugs. Thus, a regional treatment of pancreatic cancer may increase response behaviour. Intra-arterial administration of drugs generates homogenous drug distribution throughout the entire tumor volume.
**Methods:** We report on treatment outcome of 452 patients with advanced pancreatic carcinoma (WHO stage III: 172 patients, WHO stage IV: 280 patients). Patients have been separated to two different treatment protocols. The first group (n =346 patients) has been treated via angiographically placed celiac axis catheters. The second group (n = 106 patients) had upper abdominal perfusion (UAP) with stopflow balloon catheters in aorta and vena cava.
Both groups have been treated with a combination of cisplatin, adriamycin and mitomycin.
**Results:** For stage III pancreatic cancer, median survival rates of 9 and 12 months were reached with IA and UAP treatment, respectively. For stage IV pancreatic cancer, median survival rates of 7 and 8.5 months were reached with IA and UAP treatment, respectively. Resolution of ascites has been reached in all cases by UAP treatment. Toxicity was generally mild, WHO grade I or II, toxicity grade III or IV was only noted in patients with severe systemic pretreatment. The techniques, survival data and detailed results are demonstrated.

# Upper Abdominal Stopflow Perfusion - the 2 steps method



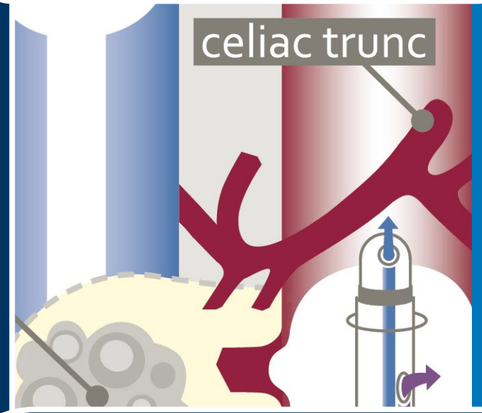

1. **STOPFLOW:** arterial balloon beneath celiac trunc, chemotherapy infusion

2. **HYPOXIC ABDOMINAL PERFUSION:** arterial balloon beneath diaphragm

# Upper Abdominal Stopflow Perfusion - the 2 steps method

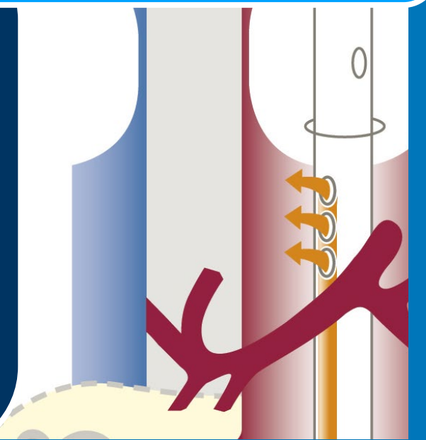
- venous catheter: balloon beneath diaphragm
  arterial catheter: balloon beneath celiac trunc
- chemotherapy infusion above inflated arterial balloon
  inflating of venous balloon (1 min)
- immediate positioning of arterial balloon
  above celiac trunc
- 5 min blocking (stopflow procedure)

## 1. Stopflow




## 2. Perfusion

- 5 min hypoxic abdominal perfusion
- 5 min chemofiltration
- deflating of balloons - further chemofiltration



# Study on 452 patients

**Pancreatic cancer**

| | |
|---|---|
| Stage III | 172 patients |
| Stage IV | 280 patients |

**Metastasis/Ascites**

| | |
|---|---|
| Ascites | 36 patients |
| Peritoneal carcinosis | 79 patients |

**Treatment**

| | |
|---|---|
| UAP | 106 patients |
| Intra-arterial Infusion | 346 patients |

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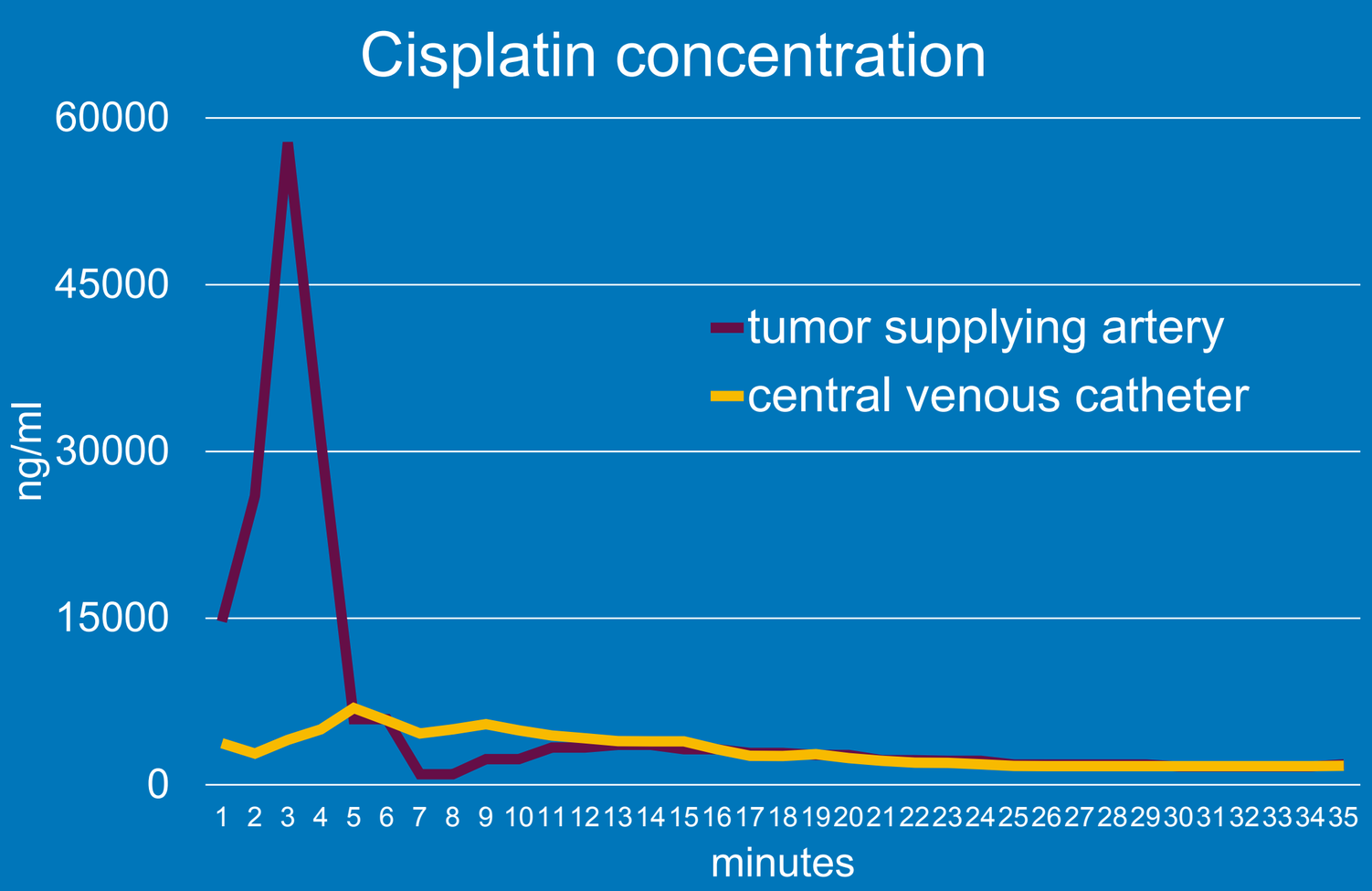
# Intra arterial chemotherapy infusion




total dosage:

50 mg Cisplatin
30 mg Adriamycin
15 mg Mitomycin

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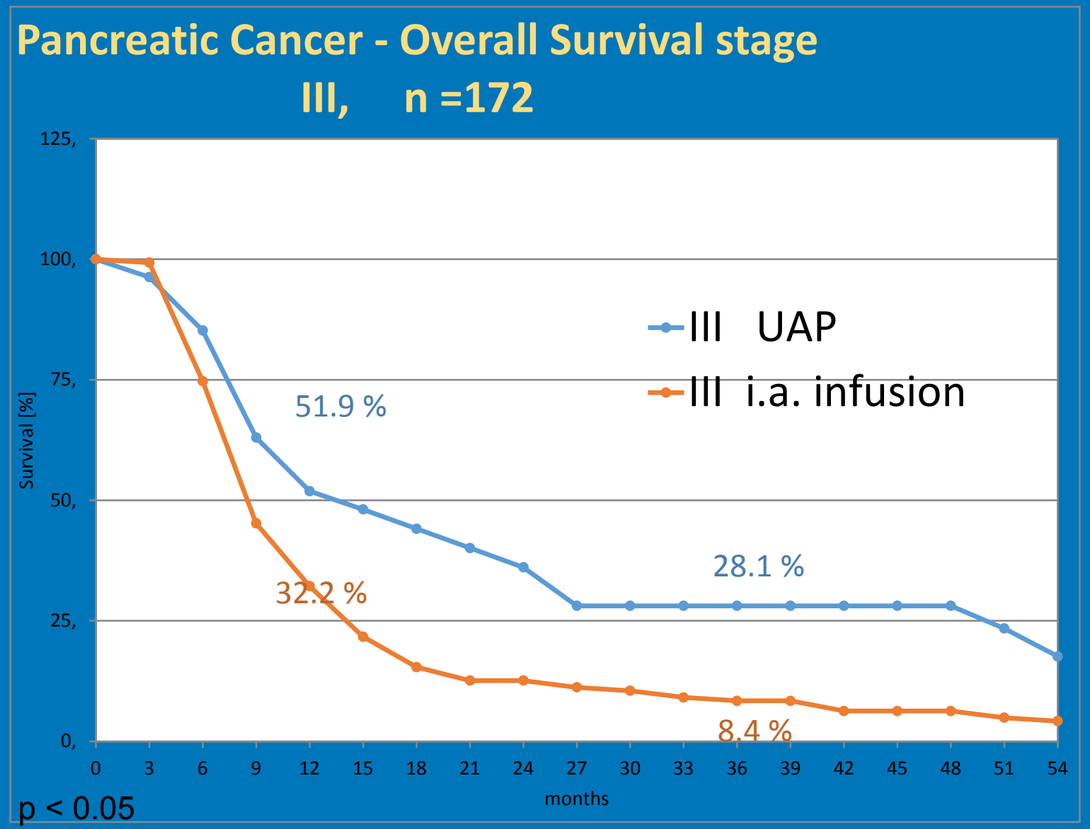
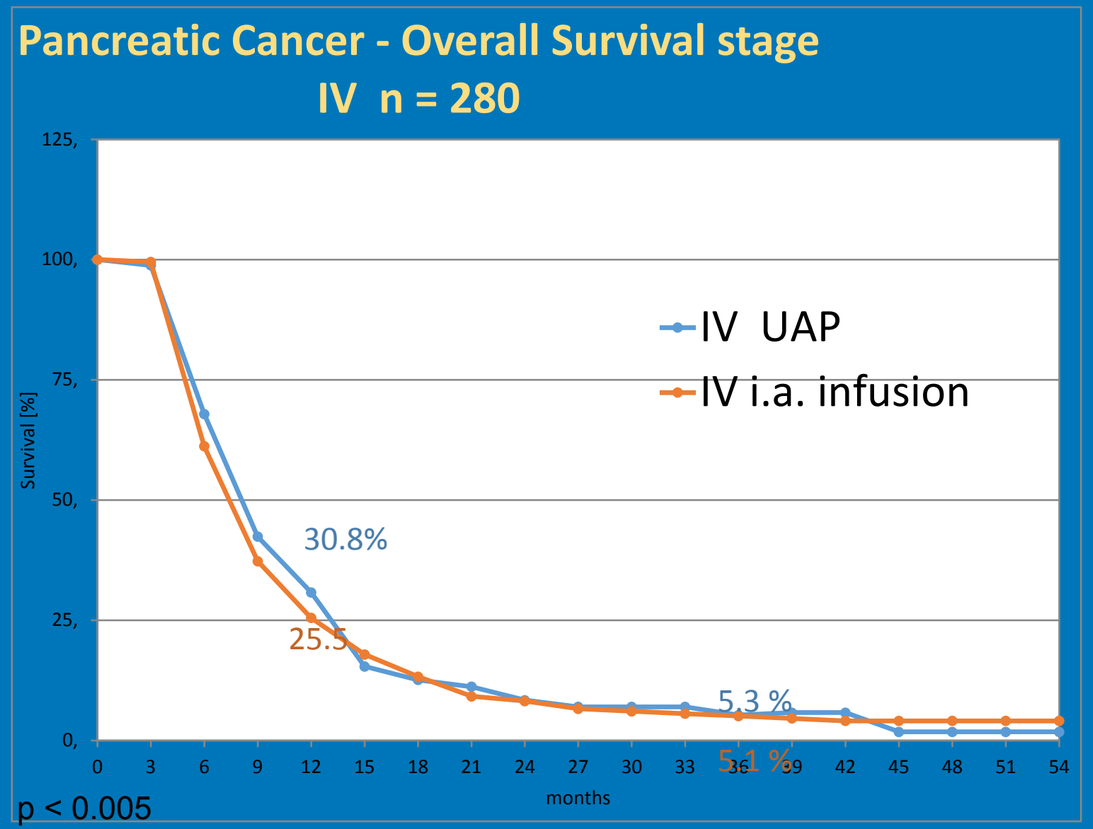
# Overall Survival




- UAP yields high survival rates in pancreatic cancer
- UAP is superior to i.a. infusion in stage III pancreatic cancer
- resolution of ascites in all cases through UAP (60% maintenance for at least 3 months)

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