Neoadjuvant Plus Adjuvant or Only Adjuvant Nab-Paclitaxel Plus Gemcitabine for Resectable Pancreatic Cancer (NEONAX)

**Purpose**

NEONAX is an interventional, prospective, randomized, controlled, open label, two sided survival phase II studies against a fixed survival probability, with an unconnected analysis of the results in both experimental arms. Determining the impact of 2 cycles of Perioperative nab-paclitaxel/gemcitabine followed by surgery and 4 cycles of adjuvant nab-paclitaxel/gemcitabine or 6 cycles of adjuvant nab-paclitaxel/gemcitabine on the Disease free survival (DFS) rate at 18 months post randomization.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Intervention</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resectable Pancreatic Cancer</td>
<td>Drug: perioperative nab-paclitaxel/gemcitabine</td>
<td>Phase 2</td>
</tr>
<tr>
<td>Ductal Adenocarcinoma of the Pancreas</td>
<td>Drug: adjuvant nab-paclitaxel/gemcitabine</td>
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**Study Type:** Interventional  
**Study Design:** Allocation: Randomized  
Endpoint Classification: Efficacy Study  
Intervention Model: Parallel Assignment  
Masking: Open Label  
Primary Purpose: Treatment

**Official Title:** Neoadjuvant Plus Adjuvant or Only Adjuvant Nab-Paclitaxel Plus Gemcitabine for Resectable Pancreatic Cancer: A Prospective, Randomized, Controlled, Phase II Study of the AIO (Working Group for Medical Oncology From the German Cancer Society) Pancreatic Cancer Group

**Resource links provided by NLM:**

MedlinePlus related topics: Cancer Pancreatic Cancer

Drug Information available for: Paclitaxel Gemcitabine Gemcitabine hydrochloride

U.S. FDA Resources

Further study details as provided by AIO-Studien-gGmbH:

**Primary Outcome Measures:**
- Time to Disease free survival (DFS) [ Time Frame: 18 months after randomization ] [ Designated as safety issue: No ]
  
  To improve the DFS rate at 18 months in at least one arm to ≥ 55%

**Secondary Outcome Measures:**
- Safety [ Time Frame: 57 months ] [ Designated as safety issue: Yes ]
- Safety of nab-paclitaxel/gemcitabine in the neoadjuvant and adjuvant setting
• morbidity and mortality [Time Frame: 7 years] [Designated as safety issue: Yes]
  • pre- and postoperative morbidity and mortality in both studies
• toxicity [Time Frame: 57 months] [Designated as safety issue: Yes]
  • Dropout rate due to toxicity in the neoadjuvant study
• Disease progression [Time Frame: 7 years] [Designated as safety issue: No]
  • Disease progression during neoadjuvant therapy
• resection rate [Time Frame: 41 months] [Designated as safety issue: No]
  • R0 and R1 resection rate in both groups as assessed according to the German S3 guidelines
• Tumor response [Time Frame: 45 months] [Designated as safety issue: No]
  • Tumor response according to RECIST v1.1; histopathological regression based on a predefined pathological handling of the resected specimen in the perioperative study
  • Correlation of tumor regression and R0 resection rate with response according to RECIST v1.1 in the perioperative study
• Overall survival [Time Frame: 7 years] [Designated as safety issue: No]
  • Overall survival in both studies
• tumor recurrence [Time Frame: 7 years] [Designated as safety issue: No]
  • First site of tumor recurrence in both studies
• quality of life [Time Frame: 57 months] [Designated as safety issue: No]
  • Explorative analysis of health related quality of life in both studies
• pharmacogenomic markers, tumor-biomarkers and molecular analyses [Time Frame: 57 months] [Designated as safety issue: No]
  • Correlation of DFS, OS and tumor regression with pharmacogenomic markers, tumor-biomarkers and molecular analyses in both studies
• Safety [Time Frame: 57 months] [Designated as safety issue: Yes]
  • Assessment of safety

Estimated Enrollment: 166
Study Start Date: April 2015
Estimated Study Completion Date: February 2022
Estimated Primary Completion Date: March 2019 (Final data collection date for primary outcome measure)

<table>
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<tr>
<th>Arms</th>
<th>Assigned Interventions</th>
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<tbody>
<tr>
<td>Experimental: perioperative nab-paclitaxel/gemcitabine neoadjuvant chemotherapy (8 weeks) preceding surgery (3 weeks after completion of chemotherapy) followed by adjuvant chemotherapy (16 weeks, begin within 12 weeks after surgery)</td>
<td>Drug: perioperative nab-paclitaxel/gemcitabine 2 cycles of nab-paclitaxel/gemcitabine (nab-paclitaxel 125 mg/m2, gemcitabine 1000 mg/m2 on day 1, 8 and 15 of an 28 day-cycles) followed by 3 weeks of rest and subsequent tumor surgery. Starting within 12 weeks after surgery adjuvant chemotherapy with 4 cycles of nab-paclitaxel/gemcitabine (nab-paclitaxel 125 mg/m2, gemcitabine 1000 mg/m2 on day 1, 8 and 15 of an 28 day-cycles)</td>
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<tr>
<td>Experimental: adjuvant nab-paclitaxel/gemcitabine Surgery followed by adjuvant chemotherapy (24 weeks, begin within 12 weeks after surgery), follow-up per patient: Until end of study or death</td>
<td>Drug: adjuvant nab-paclitaxel/gemcitabine Tumor surgery followed by adjuvant chemotherapy with 6 cycles of nab-paclitaxel/gemcitabine (nab-paclitaxel 125 mg/m2, gemcitabine 1000 mg/m2 on day 1, 8 and 15 of an 28 day-cycles, starting within 12 weeks after surgery)</td>
</tr>
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Detailed Description:
The planned trial will enable us to address the following issues:

• Identification of patients who benefit from surgery. Tumor progress during intensified Perioperative chemotherapy is likely to indicate a particularly poor prognosis suggesting that these patients would not have benefitted from immediate surgery.
• Assess tumor response/downsizing using nab-paclitaxel/gemcitabine also at the molecular level
• Can we achieve a better systemic tumor control or reduce the metastatic spread using nab-paclitaxel/gemcitabine compared to adjuvant gemcitabine
• Examining the effect of a more efficacious chemotherapy regimen (nab-paclitaxel/gemcitabine) in the adjuvant setting
• Defining the impact of a perioperative or adjuvant chemotherapy with gemcitabine/nab-paclitaxel on DFS and 3-year Overall survival (OS)
Histopathological tumor regression will be evaluated in addition to tumor size measurement according to Response Evaluation Criteria In Solid Tumors (RECIST). We will establish a histopathological tumor regression score to evaluate the efficacy of the neoadjuvant treatment. For this score we will examine tumor core biopsies obtained prior to neoadjuvant treatment and histological tumor specimen after surgery in both arms.

To reliably determine R0 resections, the resected specimen will be prepared for pathology in a defined manner according to the procedure set out in the German S3 guidelines for pancreatic cancer.

This trial provides the unique opportunity in pancreatic cancer to obtain material prior to and after surgery for biomarker analysis and correlation with outcome. We will perform pharmacogenomic candidate gene analysis of hENT1 (human equilibrative nucleoside transporter-1), CDA (cell differentiation agent), DCK (Desoxycytidin-Kinase) and 5’ nucleotidase in both arms.

**Eligibility**

Ages Eligible for Study: 18 Years to 75 Years (Adult, Senior)

Genders Eligible for Study: Both

Accepts Healthy Volunteers: No

**Criteria**

### Inclusion criteria:

- Histologically proven clearly resectable ductal adenocarcinoma of the pancreas (PDAC) ≤ c T3 with no prior tumor specific treatment.
- No evidence of metastases to distant organs (e.g. liver, peritoneum, lung).
- Resectable tumor. Determination of resectability based on spiral CT scans with both oral and i.v. contrast enhancement or on MRI using a recent consensus definition (Resectability: Clear fat planes around the celiac artery, hepatic artery and superior mesenteric artery).1,2
- ECOG performance status 0 or 1 (Performance Status according to Eastern Cooperative Oncology Group)
- Creatinine clearance ≥ 30 ml/min
- Serum total bilirubin level ≤ 1.5 x ULN (Upper Limit of Normal)
- Transaminases ≤ 2.5 x ULN
- In case of biliary obstruction, biliary decompression is required. Post-interventional bilirubin levels must be ≤ 1.5 x ULN
- White blood cell count ≥ 3.5 x 10^6/ml, neutrophil granulocytes count ≥ 1.5 x 10^6/ml, platelet count ≥ 100 x 10^6/ml
- Signed informed consent
- Age ≥ 18 years and <75 years

### Exclusion criteria:

- Borderline resectable PDAC by radiologic criteria
- Papillary cancer
- Neuroendocrine Cancer
- Tumor specific pre-treatment
- Local recurrence
- Peritoneal or other distant metastases
- Radiographic evidence of severe portal hypertension/cavernous transformation
- Infiltration of extrapancreatic organs (except duodenum)
- Ascites
- Gastric outlet obstruction
- Global respiratory insufficiency requiring oxygen supplementation
- Chronic infectious diseases, immune deficiency syndromes
- Premalignant hematologic disorders, e.g. myelodysplastic syndrome
- Disability to understand and sign written informed consent document
- Past or current history of malignancies except for the indication under this study and curatively treated:
  - Basal and squamous cell carcinoma of the skin
  - In-situ carcinoma of the cervix
  - Other malignant disease without recurrence after at least 5 years of follow-up
- Clinically significant cardiovascular disease in (incl. Myocardial infarction, unstable angina, symptomatic congestive heart failure, serious uncontrolled cardiac arrhythmia) 6 months before enrollment
- Clinically relevant or history of interstitial lung disease, e.g. non-infectious pneumonitis or pulmonary fibrosis or evidence of interstitial lung disease on baseline chest CT scan
- History of evidence upon physical examination of CNS (central nervous system) disease unless adequately treated (e.g. primary brain tumor, seizure not controlled with standard medical therapy, brain metastases or history of stroke)
- Pre-existing neuropathy > grade 1 (NCI CTCAE), except for loss of tendon reflex
- Allogeneic transplantation requiring immunosuppressive therapy or other major immunosuppressive therapy
- Severe non-healing wounds, ulcers or bone fractures
- Evidence of bleeding diathesis or coagulopathy
- Patients not receiving therapeutic anticoagulation must have an INR (International Normalized Ratio) < 1.5 ULN and PTT (Partial Thromboplastin Time) < 1.5 ULN within 7 days prior to randomization. The use of full dose anticoagulants is allowed as long as the INR or PTT is within therapeutic limits (according to the medical standard in the institution) and the patient has been on a stable dose for anticoagulants for at least two weeks at the time of randomization.
• Major surgical procedures, except open biopsy, nor significant traumatic injury within 28 days prior to randomization, or anticipation of the need for major surgical procedure during the course of the study except for surgery of pancreatic cancer with curative intent and central intravenous line placement for chemotherapy administration.

• Pregnancy or breastfeeding women.

• Subjects with known allergies to the study drugs or to any of its excipients.

• Current or recent (within the 28 days prior randomization) treatment with another investigational drug or participation in another investigational study.

• Any psychological, familial, sociological or geographical condition potentially compromising compliance with the study protocol and the follow-up schedule; those conditions should be discussed with the patient prior to registration in the trial.

Contacts and Locations

Choosing to participate in a study is an important personal decision. Talk with your doctor and family members or friends about deciding to join a study. To learn more about this study, you or your doctor may contact the study research staff using the Contacts provided below. For general information, see Learn About Clinical Studies.

Please refer to this study by its ClinicalTrials.gov identifier: NCT02047513

Contacts

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Locations

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Principal Investigator: Thomas Seufferlein, Prof. Dr.

Sponsors and Collaborators

AIO-Studien-gGmbH
Celgene
ClinAssess GmbH

Investigators

Principal Investigator: Thomas Seufferlein, Prof. Dr. University of Ulm, Dept. of Internal Medicine I

More Information

Additional Information:

AIO - Working Group for Medical Oncology from the German Cancer Society

Responsible Party: AIO-Studien-gGmbH
ClinicalTrials.gov Identifier: NCT02047513  History of Changes
Other Study ID Numbers: AIO-PAK-0313  2013-005559-34  AX_CL_PANC_AIO_003710
Study First Received: January 9, 2014
Last Updated: July 28, 2016
Health Authority: Germany: Federal Institute for Drugs and Medical Devices

Additional relevant MeSH terms:

Adenocarcinoma  Antineoplastic Agents, Phytochemical
Pancreatic Neoplasms  Antineoplastic Agents
Carcinoma  Tubulin Modulators
Neoplasms, Glandular and Epithelial  Antimitotic Agents
Neoplasms by Histologic Type  Mitosis Modulators
Neoplasms  Molecular Mechanisms of Pharmacological Action
Digestive System Neoplasms  Antimetabolites, Antineoplastic
Neoplasms by Site  Antimetabolites
Endocrine Gland Neoplasms  Antiviral Agents
Digestive System Diseases  Anti-Infective Agents
Pancreatic Diseases  Enzyme Inhibitors
Endocrine System Diseases  Immunosuppressive Agents
Paclitaxel  Immunologic Factors
Gemcitabine  Physiological Effects of Drugs