INPLASY PROTOCOL

To cite: Wu et al. Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy Versus Neoadjuvant Chemotherapy with Conventional Radiation for Locally Advanced Pancreatic Cancer and Borderline Resectable Pancreatic Cancer: An International Systematic Review and Meta-analysis. Inplasy protocol 202140112. doi: 10.37766/inplasy2021.4.0112

Received: 21 April 2021

Published: 22 April 2021

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Support: **No support.**

Review Stage at time of this submission: **Preliminary searches.**

Conflicts of interest:
None declared.

Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy Versus Neoadjuvant Chemotherapy with Conventional Radiation for Locally Advanced Pancreatic Cancer and Borderline Resectable Pancreatic Cancer: An International Systematic Review and Meta-analysis

Wu, HY[1]; Wang, Q[2]; Ye, JY[3]; Li, JZ[4].

Review question / Objective: **P: Patients with LAPC or BRPC; I: Receive Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy; C: Receive Neoadjuvant Chemotherapy with Conventional Radiation; O: overall survival and R0 resectable rate S: RCTs and Retrospective Studies.**
Condition being studied: **At present, Neoadjuvant therapy has been used to treat LAPC and BRPC, and has been initially shown to improve the R0 resection rate and prolong the survival of patients. However, the best mode of neoadjuvant therapy for pancreatic cancer has not yet reached a broad consensus. This study aimed to compare the efficacy of Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy and Neoadjuvant Chemotherapy with Conventional Radiation in LAPC and BRPC.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 April 2021 and was last updated on 22 April 2021 (registration number INPLASY202140112).

INTRODUCTION

Review question / Objective: **P: Patients with LAPC or BRPC; I: Receive Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy; C: Receive Neoadjuvant Chemotherapy with Conventional Radiation; O: overall survival and R0 resectable rate S: RCTs and Retrospective Studies.**

Rationale: Neoadjuvant therapy can eradicate tumor cells along vessel margins increasing the likelihood of achieving a margin-negative resection and improve local control.

Condition being studied: At present, Neoadjuvant therapy has been used to treat LAPC and BRPC, and has been initially shown to improve the R0 resection rate and prolong the survival of patients. However, the best mode of neoadjuvant therapy for pancreatic cancer has not yet reached a broad consensus. This study aimed to compare the efficacy of Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy and Neoadjuvant Chemotherapy with Conventional Radiation in LAPC and BRPC.

METHODS

Search strategy: ((((((((((((((((((((((((((Gamma Knife Radiosurgery[Title/Abstract]) OR (Radiosurgery, Gamma Knife[Title/Abstract])) OR (Gamma Knife Radiosurgeries[Title/Abstract])) OR (Stereotactic Radiation[Title/Abstract])) OR (Radiation, Stereotactic[Title/Abstract])) OR (Stereotactic Radiations[Title/Abstract])) OR (Stereotactic Radiosurgery[Title/Abstract])) OR (Radiosurgery, Stereotactic[Title/Abstract])) OR (Stereotactic Radiosurgeries[Title/Abstract])) OR (Radiosurgery, Linear Accelerator[Title/Abstract])) OR (Linear Accelerator Radiosurgeries[Title/Abstract])) OR (LINAC Radiosurgery[Title/Abstract])) OR (LINAC Radiosurgeries[Title/Abstract])) OR (Radiosurgery, LINAC[Title/Abstract])) OR (Linear Accelerator Radiosurgery[Title/Abstract])) OR (Stereotactic Body Radiotherapy[Title/Abstract])) OR (Radiotherapy, Stereotactic Body[Title/Abstract])) OR (Stereotactic Body Radiotherapies[Title/Abstract])) OR (CyberKnife Radiosurgery[Title/Abstract])) OR (CyberKnife Radiosurgeries[Title/Abstract])) OR (Radiosurgery, CyberKnife[Title/Abstract])) OR (Stereotactic Radiation Therapy[Title/Abstract])) OR (Radiation Therapy, Stereotactic[Title/Abstract])) OR (Stereotactic Radiation Therapies[Title/Abstract])) OR (Therapy, Stereotactic Radiation[Title/Abstract])) OR ("Radiosurgery"[Mesh])) AND (((Neoadjuvant Therapies[Title/Abstract]) OR (Therapy, Neoadjuvant[Title/Abstract])) OR (Neoadjuvant Treatment[Title/Abstract])) OR (Neoadjuvant Treatments[Title/Abstract])) OR (Treatment, Neoadjuvant[Title/Abstract])) OR (Neoadjuvant Radiotherapy[Title/Abstract])) OR (Neoadjuvant Radiotherapies[Title/Abstract])) OR (Radiotherapy, Neoadjuvant[Title/Abstract])) OR (Neoadjuvant Radiation Treatment[Title/Abstract])) OR (Neoadjuvant Radiation Treatments[Title/Abstract])) OR (Radiation Treatment, Neoadjuvant[Title/Abstract])) OR (Treatment, Neoadjuvant Radiation[Title/Abstract])) OR (Neoadjuvant Radiation Therapy[Title/Abstract])) OR (Neoadjuvant Radiation Therapies[Title/Abstract])) OR (Radiation Therapy, Neoadjuvant[Title/Abstract])) OR (Therapy, Neoadjuvant Radiation[Title/Abstract])) OR (Neoadjuvant Radiation[Title/Abstract])) OR (Neoadjuvant Radiations[Title/Abstract])) OR (Radiation, Neoadjuvant[Title/Abstract])) OR (Neoadjuvant Systemic Therapy[Title/Abstract])) OR (Neoadjuvant Systemic Therapies[Title/Abstract])) OR (Systemic Therapy, Neoadjuvant[Title/Abstract])) OR (Therapy, Neoadjuvant Systemic[Title/Abstract])) OR (Neoadjuvant Systemic Treatment[Title/Abstract])) OR (Neoadjuvant Systemic Treatments[Title/Abstract])) OR (Systemic Treatment, Neoadjuvant[Title/Abstract])) OR (Treatment, Neoadjuvant Systemic[Title/Abstract])) OR (Neoadjuvant Chemotherapy[Title/Abstract])) OR (Chemotherapy, Neoadjuvant[Title/Abstract])) OR (Neoadjuvant Chemotherapies[Title/Abstract])) OR (Neoadjuvant Chemotherapy Treatment[Title/Abstract])) OR (Chemotherapy Treatment, Neoadjuvant[Title/Abstract])) OR (Neoadjuvant Chemotherapy Treatments[Title/Abstract])) OR (Treatment, Neoadjuvant Chemotherapy[Title/Abstract])) OR (Neoadjuvant Chemoradiotherapy[Title/Abstract])) OR (Chemoradiotherapy, Neoadjuvant[Title/

Abstract])) OR (Neoadjuvant Chemoradiotherapies[Title/Abstract])) OR (Neoadjuvant Chemoradiation Therapy[Title/Abstract])) OR (Chemoradiation Therapy, Neoadjuvant[Title/Abstract])) OR (Neoadjuvant Chemoradiation Therapies[Title/Abstract])) OR (Therapy, Neoadjuvant Chemoradiation[Title/Abstract])) OR (Neoadjuvant Chemoradiation Treatment[Title/Abstract])) OR (Chemoradiation Treatment, Neoadjuvant[Title/Abstract])) OR (Neoadjuvant Chemoradiation Treatments[Title/Abstract])) OR (Treatment, Neoadjuvant Chemoradiation[Title/Abstract])) OR (Neoadjuvant Chemoradiation[Title/Abstract])) OR (Chemoradiation, Neoadjuvant[Title/Abstract])) OR (Neoadjuvant Chemoradiations[Title/Abstract])) OR ("Neoadjuvant Therapy"[Mesh]) AND ((((((((((((((((Neoplasm, Pancreatic[Title/Abstract]) OR (Pancreatic Neoplasm[Title/Abstract])) OR (Pancreas Neoplasms[Title/Abstract])) OR (Neoplasm, Pancreas[Title/Abstract])) OR (Neoplasms, Pancreas[Title/Abstract])) OR (Pancreas Neoplasm[Title/Abstract])) OR (Neoplasms, Pancreatic[Title/Abstract])) OR (Cancer of Pancreas[Title/Abstract])) OR (Pancreas Cancers[Title/Abstract])) OR (Pancreas Cancer[Title/Abstract])) OR (Cancer, Pancreas[Title/Abstract])) OR (Cancers, Pancreas[Title/Abstract])) OR (Pancreatic Cancer[Title/Abstract])) OR (Cancer, Pancreatic[Title/Abstract])) OR (Cancers, Pancreatic[Title/Abstract])) OR (Pancreatic Cancers[Title/Abstract])) OR (Cancer of the Pancreas[Title/Abstract])) OR ("pancreatic neoplasms"[MeSH Terms])).

Participant or population: Only human clinical trials were included in this present systematic review. The patients must have diagnostic of LAPC or BRPC.

Intervention: Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy.

Comparator: Neoadjuvant Chemotherapy with Conventional Radiation.

Study designs to be included: RCTs; Retrospective Studies.

Eligibility criteria: The inclusion criteria for the study will include: 1) patients diagnosed with locally advanced pancreatic cancer or Borderline resectable pancreatic cancer; 2) Receive Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy or Neoadjuvant Chemotherapy with Conventional Radiation; 3) either no control group or another definitive chemotherapy or radiation therapy arm; 4) at least 1 of the outcome measures reported; and 5) single or multi-arm prospective study or retrospective study for Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy and/or single or multi-arm prospective study or retrospective study for Neoadjuvant Chemotherapy with Conventional Radiation.

Information sources: We will search the EMBASE, Web of Science, PubMed, ClinicalTrials.gov and Cochrane Library from inception to May 01, 2021 to retrieve relevant studies. We will also search citations of relevant primary and review. Authors of abstract in the meeting will be further searched in PubMed for potential full articles. To minimize the risk of publication bias, we will conduct a comprehensive search that included strategies to find published and unpublished studies.

Main outcome(s): Overall survival and R0 resectable rate.

Quality assessment / Risk of bias analysis: Risk of bias assessment will be carried out according to the Newcastle-Ottawa Scale (NOS) to rate the internal validity of the individual studies, and funnel plots will be constructed t o assess the risk of publication bias.

Strategy of data synthesis: All pairwise meta-analytic calculations will be performed with STATA version16.0. Heterogeneity will be examined by computing the Q statistic and I^2 statistic, and presence of reporting bias by visual

inspection of funnel plots. Statistical significance was considered when the P value <0.05.

Subgroup analysis: BRPC Patients received Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy and BRPC Patients received Neoadjuvant Chemotherapy with Conventional Radiation; LAPC Patients received Neoadjuvant Chemotherapy with Stereotactic Body Radiation Therapy and LAPC Patients received Neoadjuvant Chemotherapy with Conventional Radiation.

Sensitivity analysis: Heterogeneity will be examined by computing the Q statistic and I^2 statistic, and presence of reporting bias by visual inspection of funnel plots. Statistical significance was considered when the P value <0.05.

Language: No language limits.

Country(ies) involved: China; USA.

Keywords: Borderline Resectable Pancreatic Cancer; Locally advanced pancreatic cancer; Neoadjuvant, Stereotactic body radiation therapy; Chemotherapy; Conventional Radiation.

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