INPLASY PROTOCOL

To cite: Guan et al. Safety and efficacy of high dose pulse calcitriol and docetaxel for androgen-independent prostate cancer A protocol for systematic review and meta-analysis. Inplasy protocol 202170028. doi: 10.37766/inplasy2021.7.0028

Received: 10 July 2021

Published: 10 July 2021

Corresponding author:
Tao Qi

qitao778754@163.com

Author Affiliation:
Oncology Hematology Department, Xijing 986 Hospital, Fourth Military Medical University.

Support: **Liuzhou Municipal Science.**

Review Stage at time of this submission: **The review has not yet started.**

Conflicts of interest:
None declared.

Safety and efficacy of high dose pulse calcitriol and docetaxel for androgen-independent prostate cancer A protocol for systematic review and meta-analysis

Guan, X[1]; Ding, Y[2]; Qi, T[3].

Review question / Objective: **This study aims to evaluate the clinical safety and efficacy of high-dose pulse calcitriol and docetaxel for androgen-independent prostate cancer.**
Condition being studied: **Prostate cancer is a common disease and the second leading cause of cancer deaths in men. Previous therapy usually included prostatectomy or radiation to remove or destroy the cancerous cells within the prostate capsule. But, many patients eventually fail therapy and die of AIPC2. To date, there is no effective cure for prostate cancer. Hormone therapy for androgen-independent prostate cancer is intractable and the therapeutic effect is not satisfactory due to hormone-refractory prostate cancer (HRPC) which prostate cancer no longer responds to any hormonal treatment. Calcitriol has a wide range of actions in some different types of cancers as colon cancer, breast and prostate cancer.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 July 2021 and was last updated on 10 July 2021 (registration number INPLASY202170028).

INTRODUCTION

Review question / Objective: **This study aims to evaluate the clinical safety and efficacy of high-dose pulse calcitriol and docetaxel for androgen-independent prostate cancer.**

Rationale: **Previous therapy usually included prostatectomy or radiation to remove or destroy the cancerous cells within the prostate capsule. But, many patients eventually fail therapy and die of recurrent androgen-independent prostate**

cancer (AIPC). To date, there is no effective cure for prostate cancer.

Condition being studied: Prostate cancer is a common disease and the second leading cause of cancer deaths in men. Previous therapy usually included prostatectomy or radiation to remove or destroy the cancerous cells within the prostate capsule. But, many patients eventually fail therapy and die of AIPC2. To date, there is no effective cure for prostate cancer. Hormone therapy for androgen-independent prostate cancer is intractable and the therapeutic effect is not satisfactory due to hormone-refractory prostate cancer (HRPC) which prostate cancer no longer responds to any hormonal treatment. Calcitriol has a wide range of actions in some different types of cancers as colon cancer, breast and prostate cancer.

METHODS

Participant or population: We will include the participants who conformed to the Guidelines for diagnosis of AIPC. The participants have no restrictions regardless of gender, age, educational background, and race.

Intervention: The control group was treated with docetaxel alone, and the treatment group was treated with the high-dose oral formulation of calcitriol and docetaxel.

Comparator: The control group included docetaxel alone or docetaxel plus placebo, and the intervention group was treated with the high-dose oral formulation of calcitriol and docetaxel or docetaxel plus prednisone or mitoxantrone.

Study designs to be included: Randomized controlled trials (RCT) involving the safety and efficacy of high-dose pulse calcitriol and docetaxel for AIPC will be included. The language will be limited to Chinese and English.

Eligibility criteria: Two independent reviews (XG and YD) will independently extract information based on the following three characteristics: general information (author, county, sample size, age, gender, diagnostic criteria, inclusion and exclusion criteria), interventions (interventions in treatment and control groups, duration, follow-up time), and outcomes (type of indicators and methods of determination). If studies were missing some relevant information included, they will contact for further information. Any disagreements arising from this process will be resolved by consensus or adjudicated by a third investigator (TQ).

Information sources: RCTs of the safety and efficacy of high dose pulse calcitriol and docetaxel for AIPC will be retrieved according to the requirements of the following databases: PubMed, PubMed Central, EMbase, Medline, China National Knowledge Infrastructure (CNKI), Wang Fang Database (WF), and Web of Science. The search strategy of PubMed can be found in supplemental Table 1. Similarly, the search strategy will also be applied to other electronic databases. Furthermore, all eligible trials and relevant reviews will be searched

Main outcome(s): The main outcomes were the proportion of patients achieving prostate-specific antigen (PSA) response, PSA, tumor, and clinical PFS, tumor response rate, skeletal morbidity-free survival, as well as safety and tolerability of the study treatment. The clinical efficacy was evaluated according to overall response rate (ORR), overall survival and median survival.

Additional outcome(s): Additional outcomes included common grade 3/4 toxicities and neutropenia, fatigue, infection, and hyperglycemia.

Data management: Two independent authors (XG and YD) will scanning titles, abstracts to eliminate relatively unrelated literature. References will be managed by EndNote X9 software (Clarivate Analytics, Boston, MA) and duplicate articles will be removed. When there is a dispute, the full text of the potentially eligible studies will be retrieved and independently assessed

for eligibility by two reviewers (XG and YD). Any disagreements arising from this process will be resolved by consensus or adjudicated by a third investigator (TQ). According to the search strategy, the search and screening of the literature screening will be performed according to the developed inclusion and exclusion criteria and the eligible included kinds of literature will be identified.

Quality assessment / Risk of bias analysis: The methodological quality of randomized controlled trials will be assessed by two independent reviews (XG and YD) via the Cochrane risk of bias tool. The characteristic items included random sequence generation, participant blinding, outcome assessor blinding, incomplete outcome data, other bias, and exclusions. The risk of bias item will include low, high, or unclear risk of bias.

Strategy of data synthesis: The meta-analysis analysis and data synthesis will be conducted by RevMan V.5.3.0 software (The Nordic Cochrane Center, The Cochrane Collaboration, 2014, Copenhagen, Denmark). When outcome measures do not correspond among studies, the standardized mean difference will be used. Dichotomous data will be analyzed using relative risks (RRs) with 95% confidence intervals, or standardized mean differences (95%) CI will be used to analyze the continuous data.

Subgroup analysis: If there are a sufficient number of literatures, we will perform subgroup analysis to seek a possible causes of heterogeneity.

Sensitivity analysis: Sensitivity analysis will be done to eliminate the impact of low-quality literatures after validation of inputted data to make sure the results are reliable. However, if the included studies are at high risk of bias, sensitivity analysis will not be done.

Language: English.

Country(ies) involved: China.

Keywords: Calcitriol, chemotherapy, prostate cancer, vitamin D, systematic review.

Contributions of each author:

Author 1 - Xiaoyong Guan.
Email: 395253175@qq.com
Author 2 - Yanling Ding.
Email: 309384509@qq.com
Author 3 - Tao Qi.
Email: qitao778754@163.com