

INPLASY PROTOCOL

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None declared.

Association of rs2244613 Polymorphism with Dabigatran Pharmacokinetics and Safety: A Systematic Review and Meta-Analysis

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Review question / Objective: Do rs2244613 Polymorphism affect the pharmacokinetics and safety of dabigatran?

Condition being studied: Dabigatran is a representative drug of DOACs that works as a kind of thrombin inhibitor and has been widely used to treat atrial fibrillation. CES1 is a crucial liver enzyme that contributes to the metabolism of many drugs containing ester moieties, including dabigatran. Thus, single nucleotide polymorphisms (SNPs) in the CES1 gene may lead to interindividual differences in dabigatran pharmacokinetics (PKs), which may affect the metabolism and bioavailability of this drug.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 07 June 2022 and was last updated on 07 June 2022 (registration number INPLASY202260027).

INTRODUCTION

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METHODS

Participant or population: Patients treated with dabigatran will be included.

Intervention: Determination of rs2244613 polymorphisms.

Comparator: rs2244613 polymorphisms.

Study designs to be included: There are no restrictions on the types of study.

Eligibility criteria: None.

Information sources: Electronic databases and contact with authors.

Main outcome(s): Outcome among pharmacokinetic parameters including plasma concentration, and clinical outcomes, including any bleeding, major bleeding, and minor bleeding.

Quality assessment / Risk of bias analysis: The Newcastle–Ottawa scale (NOS) tool, which based on three domains including the selection of exposed and unexposed subjects (0 – 4 points), comparability of study groups (0 – 2 points), and outcome assessment (0 – 3 points), was utilized to evaluate the quality of the research.

Strategy of data synthesis: I² test was used to assess heterogeneity, depending on which the methods for pooled effect estimation were selected. If the heterogeneity was less than 50%, a fixed-effect model was selected, otherwise, a random-effect one was chosen.

Subgroup analysis: Subgroup analysis was done.

Sensitivity analysis: Sensitivity analysis was done.

Country(ies) involved: China, Canada, Russia, Czechia, Finland.

Keywords: CES1, Rs2244613, polymorphism, dabigatran, pharmacokinetics.

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