

INPLASY PROTOCOL

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Corresponding author:
Jianming Zheng

zhengjm317@126.com

Author Affiliation:
Tianjin First Central Hospital.

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None declared.

Influence of frailty on survival of patients after kidney transplantation

Zheng, JM¹; Cao, Y²; Wang, Z³; Guo, LP⁴; Song, WL⁵.

Review question / Objective: Frailty is prevalent in candidate and recipients of kidney transplantation (KT). However, the influence of frailty on the clinical outcomes of patients after KT remains unclear. We performed a meta-analysis to systematically evaluate the above association.

Eligibility criteria: Reviews, meta-analyses, studies including patients not receiving KT, studies that did not evaluate frailty, or studies that did not report the outcomes of interest were excluded. For studies with overlapped patient populations, the one with the largest sample size was included for the meta-analysis.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 April 2023 and was last updated on 05 April 2023 (registration number INPLASY202340008).

INTRODUCTION

Review question / Objective: Frailty is prevalent in candidate and recipients of kidney transplantation (KT). However, the influence of frailty on the clinical outcomes of patients after KT remains unclear. We performed a meta-analysis to systematically evaluate the above association.

Rationale: Frailty is common in patients after KT, while the prognostic influence of frailty in these patients is less known.

Condition being studied: As a preferred treatment modality for patients with end-stage renal disease (ESRD), kidney transplantation (KT) reduces mortality and improves quality of life, as compared to renal replacing therapies such as dialysis. With the accelerated aging of the population and improved surgical

technique for KT, the number of patients after KT will continuously grow.

METHODS

Search strategy: ("frailty" OR "frail") AND ("renal" OR "kidney") AND ("transplantation" OR "transplant") .

Participant or population: Patients scheduled for KT, without restrictions of the etiology and surgical protocol.

Intervention: Patients with frailty at admission. Methods and criteria for defining patients with frailty were consistent with the modalities used in the original studies.

Comparator: Patients without frailty at admission.

Study designs to be included: Prospective or retrospective cohort studies.

Eligibility criteria: Reviews, meta-analyses, studies including patients not receiving KT, studies that did not evaluate frailty, or studies that did not report the outcomes of interest were excluded. For studies with overlapped patient populations, the one with the largest sample size was included for the meta-analysis.

Information sources: PubMed, Embase, and Cochrane Library.

Main outcome(s): The primary outcome was all-cause mortality during follow-up, and the secondary outcomes were the incidence of delayed graft function (DGF), overall postoperative complications, and proportion of patients with longer hospitalization, compared between patients with and without frailty at baseline.

Additional outcome(s): None.

Data management: Two authors separately conducted literature searches, data collection, and quality assessments.

Quality assessment / Risk of bias analysis: Based on criteria such as participant selection, group comparison, and validity, the Newcastle-Ottawa Scale (NOS) was used to assess study quality.

Strategy of data synthesis: Association between frailty and poor outcomes after KT was summarized as risk ratio (RR) and corresponding 95% confidence interval (CI) in this meta-analysis. Heterogeneity was incorporated into the random-effects model to combine the results.

Subgroup analysis: If adequate datasets were available (at least ten), subgroup analyses were performed to assess the influence of study variables on the results, such as the methods for evaluating frailty and follow-up durations.

Sensitivity analysis: We analyzed how each study impacted the overall results using a sensitivity analysis omitting one study at a time.

Language restriction: English.

Country(ies) involved: China.

Keywords: Kidney transplantation; Frailty; Mortality; Meta-analysis.

Contributions of each author:

Author 1 - Jianming Zheng.

Email: zhengjm317@126.com

Author 2 - Yu Cao.

Email: caoyucarol@126.com

Author 3 - Zhen Wang.

Email: wuzhen110@126.com

Author 4 - Liping Guo.

Email: glp_93@163.com

Author 5 - Wenli Song.

Email: wlsong_22@163.com