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**Impact of Cold Ischemic Time on Deceased Donor Kidney Transplants:  
Pioneering Asian Paired Donor Kidney Analysis**

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**Objectives :** Recent US data showed a modest influence of cold ischemic time (CIT) on long-term kidney transplantation (KT) outcomes, contrast to earlier studies. Knowledge concerning the impact of CIT, especially paired kidney donor analysis in Asian national registry, remains limited.

**Methods :** Our retrospective cohort study encompassed all deceased donor kidney transplants (DDKT) in Thailand from 2001 to 2019. The paired donor kidneys were identified using data from the Thai National Transplant Registry. We analyzed the impact of CIT on all DDKT cases and assessed differences in CIT between matched pairs of kidneys to evaluate transplant outcomes. The study followed all outcomes until the conclusion of 2022.

**Results :** This study enrolled 4,603 DDKTs from 2,446 donors with a mean CIT of  $19 \pm 5.4$  hours. Each additional hour of CIT was associated with a higher 10-year transplant failure rate from multivariate analysis (HR 1.024; 95% CI 1.011 – 1.037;  $p < 0.001$ ). When compared to DDKT cases with  $CIT \leq 14$  hours, those with longer CIT had a higher risk of 10-year transplant failure and recipient survival, respectively (HR 1.48; 95% CI 1.131 – 1.938;  $p = 0.004$  and HR 1.324; 95% CI 1.005 – 1.744;  $p = 0.046$ ). Paired kidney analysis was performed in 4,304 DDKTs with the median difference in CIT between paired kidneys of 3.17 (IQR 1.48 – 5.75) hours. Comparison between mate kidneys with differences in CIT  $> 2$  hours revealed that DDKT with longer CIT had a higher risk of 10-year all-cause graft failure and death-censored graft failure, respectively (HR 1.269; 95% CI 1.069 – 1.506;  $p = 0.006$  and HR 1.411; 95% CI 1.123 – 1.773;  $p = 0.003$ ).

**Conclusions :** Prolonged CIT is a critical risk factor for long-term graft failure and recipient mortality. Implementation of strategies aimed at reducing CIT remains imperative for improving transplant outcomes.

Fig 1.jpg

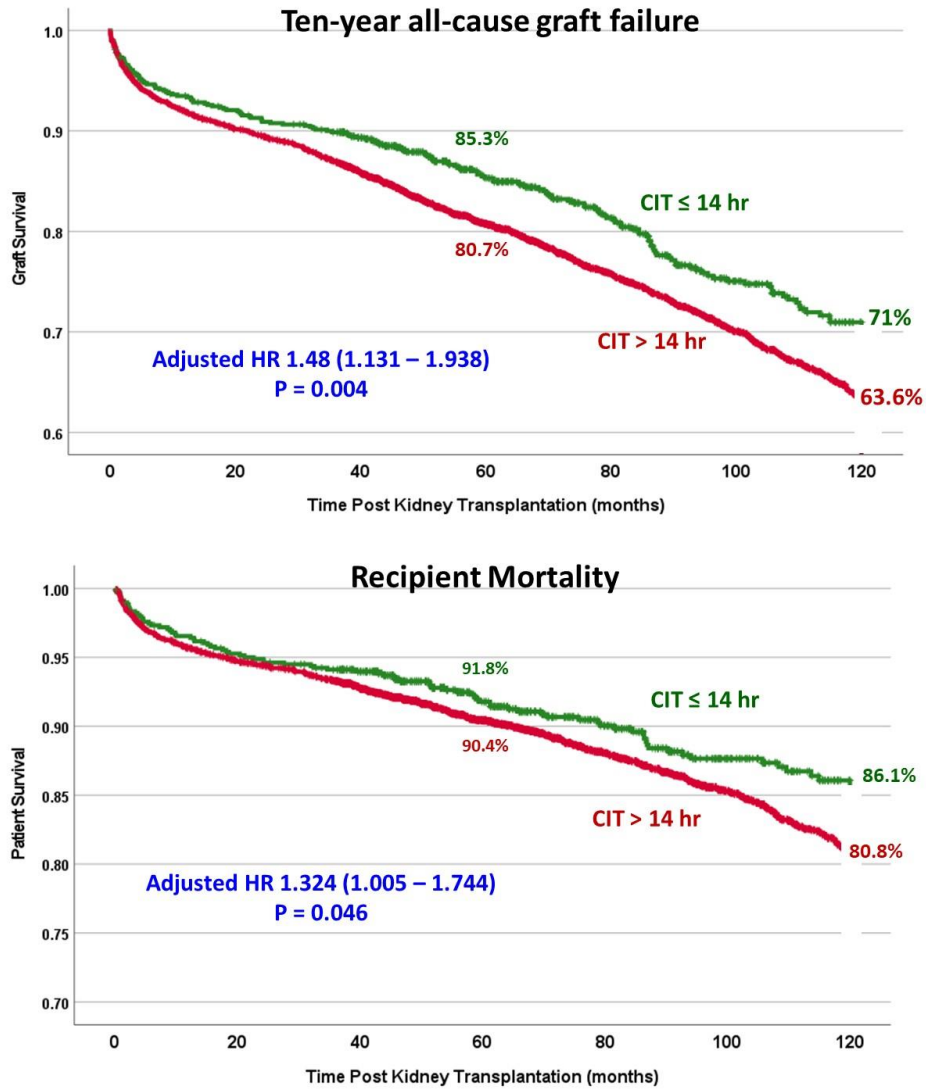


Fig 1.jpg

