

Comparison of serum cystatin C and creatinine levels to evaluate early renal function after kidney transplantation

Hekmat, R. , Eshraghi, H.

Department of Nephrology, Ghaem Hospital, **Mashhad University of Medical Sciences, Mashhad, Iran**

[View references \(۱۰\)](#)

Abstract

Background: Accurate and rapid assessment of allograft function is essential in renal transplant recipients in order to detect allograft rejection and to monitor drug nephrotoxicity. We aimed to evaluate the usefulness of cystatin C as a marker of kidney allograft function in the early post-transplant period and to compare this value with that of conventional serum creatinine concentration. **Methods:** Twenty four patients scheduled for kidney transplantation at the Kidney Transplant Center of Ghaem Hospital, Mashhad, Iran from September ۲۰۰۶ to November ۲۰۰۷, were sequentially enrolled into the present study. Serum creatinine and cystatin C concentrations and urine output were measured daily after transplantation for ۲ weeks or until discharge from the hospital. **Results:** On the ۳rd postoperative day, with a cut-off value of ۷۰ mL/min for glomerular filtration rate, areas under the receiver operating characteristic (ROC) curves were ۰.۹۲۶ for creatinine ($P=۰.۰۲۱$) and ۰.۸۱۰ for cystatin C ($P=۰.۰۸۸$). At this point creatinine was more sensitive and specific than cystatin C in estimating glomerular filtration rate. On the ۷th day after transplantation, areas under ROC curves were ۰.۸۹۳ for creatinine ($P=۰.۰۶۶$) and ۱.۰۰۰ for cystatin C ($P=۰.۰۱۷$). Therefore, cystatin C was more sensitive and specific than creatinine in estimating glomerular filtration rate. In two patients with acute rejection and arterial thrombosis, serum cystatin C concentrations increased earlier than serum creatinine. **Conclusion:** There is a correlation between creatinine and cystatin C early after kidney transplantation. Serum creatinine levels seem to be more sensitive and specific for detecting transitory changes in renal function in the ۱st week after transplantation. After the ۱st week after transplantation, cystatin C was more sensitive and specific than serum creatinine concentration.

Author keywords

Creatinine; Cystatin C; Kidney transplantation

Indexed Keywords

EMTREE drug terms: biological marker; creatinine; cystatin C

EMTREE medical terms: acute graft rejection; adult; artery thrombosis; article; clinical article; controlled study; creatinine blood level; female; glomerulus filtration rate; human; kidney allograft rejection; kidney artery stenosis; kidney function; kidney transplantation; male; postoperative complication; sensitivity and specificity; urine volume

Chemicals and CAS Registry Numbers: creatinine, ۱۹۲۳۰-۸۱-۰, ۶۰-۲۷-۰

ISSN: ۰۲۰۳۰۷۱۶ **CODEN:** IJMSD **Source Type:** Journal **Original language:** English

Document Type: Article