Nephrotoxicity of immunosuppressive agents in renal transplantation

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The outcome of solid organ transplantation has improved significantly in the past few decades with the advent of cyclosporine and other newer immunosuppressive agents including tacrolimus, mycophenolate mofetil, interleukin-2 receptor blockers, and rapamycin. A prominent consequence of the development in posttransplant immunosuppressive regimens is the reduced incidence of acute rejections, from 30% to 40% to approximately 15% or even lower (Gjertson, Clin Transpl 2000:467-80), although it still remains an important risk factor compromising long-term renal allograft survival. The acute and chronic nephrotoxicity of immunosuppressive agents, notably calcineurin inhibitors, have attracted increasing attention, and the reduction of these untoward effects has constituted an important theme of clinical research in transplantation. The current knowledge on the spectrum and mechanisms of nephrotoxicity pertinent to immunosuppressive agents used in renal transplantation is reviewed in this article and possible strategies for prevention or amelioration of the nephrotoxicity; the future directions for investigations are also discussed. (Hong Kong J Nephrol 2002;4(2):65-72)

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