

Humoral and cellular immune response in kidney transplant recipients after COVID-19 vaccination

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Editorial

With different mRNA COVID-19 vaccination in immunocompromised patients, such as kidney transplant recipients (KTRs), solid organ transplant recipients (SOTRs), etc., binding and neutralizing antibodies measurement clearly revealed lower levels, compared to healthy persons.¹⁻⁵ A number of previous studies demonstrated that KTRs or non-KTRs with renal failure markedly reduced vaccine response, whereas adaptive protocols of mRNA COVID-19 vaccination or alternative adjuvant vaccines is now not known yet.^{6,7} Whereas protective immunity is further impaired immunosuppressants, thus fully restoring adaptive, cellular immunity and renal function in KTRs cannot occur and increase susceptibility to viral-related malignancies and infections.⁸⁻¹⁰ After two doses of mRNA-COVID-19 vaccines, the seroconversion rates in KTRs were relatively low that varied from 4% to 57%^{11,12} and decreased with increasing age.^{12,13} A recent study demonstrated that everolimus (EVR), a mammalian target of rapamycin (mTOR) inhibitor had a higher seroconversion after mRNA-COVID-19 vaccination among KTRs, in comparison to mycophenolate mofetil (MMF) therapy (Figure 1).¹⁴

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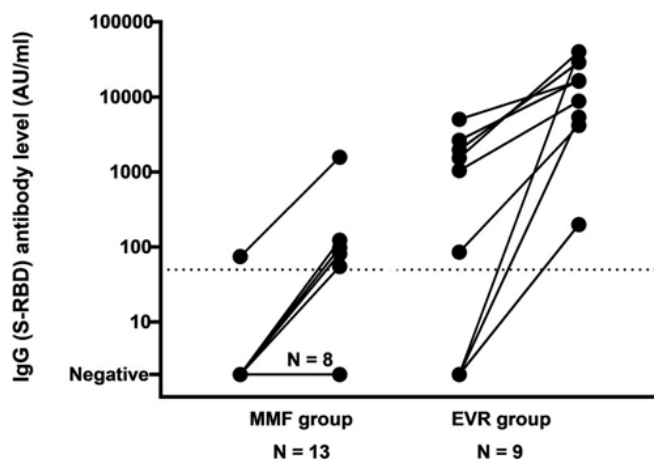


Figure 1 Demonstrating spike receptor-binding domain [S-RBD]-IgG-antibody-level changes between second and third mRNA-COVID-19 vaccination. The threshold for seroconversion is indicated by dotted line. Maximal threshold of quantification is 40000 AU/mL.

(AU, arbitrary units; EVR, everolimus; MMF, mycophenolate mofetil).¹⁴

Conclusion

In conclusion, immune response, particularly humoral immunity in elderly-post-transplant KTRs after COVID-19 vaccination was associated with EVR treatment and higher seroconversion.

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Conflicts of interests

Author declares that there is no conflict of interest.

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