

Capsule Summary

Pneumococcal Vaccination and Kidney Transplantation

- Patients undergoing kidney transplantation are at a 4-9 times higher risk of developing the invasive pneumococcal disease (IPD) when compared to the general population. (1,2) Immunization can be an important tool which can help protect patients undergoing kidney transplantation from developing IPD.
- The effectiveness of pneumococcal vaccines in patients undergoing solid organ transplantation remains unproven. A recently published study analysed the effects of pneumococcal vaccination on people undergoing kidney transplantation. The study has been summarized below:

Study Objective: To analyse if a double dose of 13-valent pneumococcal conjugate vaccine (PCV13) and of 23-valent pneumococcal polysaccharide vaccine (PPV23) helped to increase the immunogenicity of prime-boost vaccination in kidney transplant recipients (KTRs) and patients on the kidney transplant waiting list (WLPs)

Study Design and Methods: This was a phase 3, randomized non-blinded trial. 74 KTRs and 65 WLPs were randomized to receive either normal dosage (ND) vaccination (PCV13 (0.5 ml) followed by PPV23 (0.5 ml)) or double dosage (DD) vaccination (PCV13 (1.0 ml) followed by PPV23 (1.0 ml)). Vaccines were given at an interval of 12 weeks.

Primary Endpoints: Number of participants that reached a protective response five weeks after PPV23 (week 17). A 'protective response' was obtained, if the participant had an average pneumococcal antibody geometric mean concentration (GMC) ≥ 1 mg/L.

Study results:

	Proportion of participants with protective response (Double Dose)	Proportion of participants with protective response (Single Dose)	P value
WLPs	66.75 %	35.15%	P=0.015

Vaccines were safe, well-tolerated and still immunogenic at week 48

Conclusion:

- A double dosage of pneumococcal vaccines used according to the prime-boost strategy might be recommendable for WLPs.
- Data from this study support PPV23's additive effect to PCV13 in KTRs and WLPs

The complete publication can be accessed at

- <https://reader.elsevier.com/reader/sd/pii/S0264410X22006351?token=E46B6AD079DDF411EB109DC01ACF7C3902BD20BD2D98B688E00BC43A671BC7BB7C794169F73974B26782B0EDFC078F80&originRegion=eu-west-1&originCreation=2022062306065>

References:

- 1) Kumar D, Humar A, Plevneshi A, Green K, Prasad GVR, Siegal D, et al. Invasive pneumococcal disease in solid organ transplant recipients—10-year prospective population surveillance. Am J Transplant 2007;7(5):1209–14.
- 2) Rezahosseini O, Møller DL, Sørensen SS, Perch M, Gustafsson F, Gelpi M, et al. An observational prospective cohort study of incidence and outcome of streptococcus pneumoniae and Hemophilus influenzae infections in adult solid organ transplant recipients. Microorganisms 2021 Jun 24;9(7):1371.

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