

# 6th Global Congress on Nursing & Patient Care

**July 23-24, 2025 | Paris, France**



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## Secular Trends in Cytomegalovirus (CMV) Risk and Outcomes: Results from a 10-Year Longitudinal Cohort Study in Adult Kidney Transplant Recipients

### Background

The goal of this study was to determine the secular trends in the incidence of CMV sero-mismatch (D+/R-) and if these trends meaningfully impact clinical outcomes.

### Methods

This was a single-center longitudinal cohort study in adult kidney recipients transplanted between Jan 2012 and June 2021 with follow-up through June 2022. Baseline and follow-up data were collected. Univariate and multivariate statistics were used to analyze the data.

### Results

2,392 kidney transplants were performed during the study period; 132 patients did not meet inclusion criteria. The mean age was 52 years, 41% were female, 57% were black, and 19% were CMV D+/R-. The odds of being CMV high-risk increased by 6% each year (OR 1.06, 1.02-1.10 p=0.003); 48% of the variability associated with CMV serostatus was explained by transplant year ( $R^2=0.478$ , p=0.002). Sequential modeling demonstrated that CMV D+/R- serostatus was a substantial risk factor for CMV infection (HR 5.7, 4.5-7.3), CMV disease (HR 8.4, 3.9-18.0), CMV resistance (HR 17.9, 3.8-84.2), CMV refractory infection (HR 35, 4-280), late CMV infection (HR 12.0, 8.3-17.1), acute rejection, and hospitalization for opportunistic infections. Secular trend analysis demonstrated that CMV infections, CMV resistance, and late CMV increased in incidence since 2012. The risks of CMV resistance and late infection was significantly influenced by D+/R- serostatus and transplant year, indicating that this risk is worsening over time.

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### Conclusion

The CMV D+/R- serostatus remains the single most important risk factor for CMV infection, disease, resistance, refractory infection, and late CMV, which appears to be increasing in magnitude.

**Keywords:** Kidney Transplantation, Follow-Up Studies, Longitudinal Studies, Cytomegalovirus Infections, Risk Factors, Opportunistic Infections

### Biography

Amy has been a nephrology nurse practitioner for 22 years, working in all aspects of nephrology. She has managed patients with Chronic Kidney Disease and those on hemodialysis. She has been managing post kidney transplant patients at the VA in Charleston South Carolina since 2016 and is now the Clinical Administrator for the developing Kidney Transplant Center at that facility. She has spoken internationally on the use of Nurse Practitioners in Nephrology and has published on various topics in nephrology and transplant.