Disclosures. All authors: No reported disclosures.
BACKGROUND: The use of haploidentical or HLA mismatched unrelated donors permits allogeneic hematopoietic cell transplantation (HCT) in individuals with otherwise no donors available. Post-transplant cyclophosphamide (PTCy) is used for prevention graft-vs.-host disease (GVHD) in recipients of mismatched donors. We hypothesized that type and incidence of infectious complications following allogeneic HCT would vary according to the type of transplant.

METHODS: We systematically assessed viral kinetics and reactivation rates for cytomegalovirus (CMV) in a prospective cohort of mismatched unrelated donor (MMUD) HCT recipients who had PTCy at our center (April 2017–March 2019). In addition, we evaluated the incidence of invasive aspergillosis (IA), invasive candidiasis (IC), bloodstream infection (BSI), pneumonia, Clostridium difficile (CD), and community-acquired respiratory virus. Haploidentical donor and anti-thymocyte globulin (ATG) treated MMUD recipients were served as historical control groups.

RESULTS: A total of 81 patients were analyzed in 3 groups (Table 1): PTCy MMUD (group 1; n = 22), ATG MMUD (group 2; n = 40) and haploidentical (group 3; n = 19). Whereas the 1 year incidence of CMV viremia was similar across groups, the rate of clinically significant (requiring preemptive therapy) CMV viremia was lower in group 1, compared with groups 2 and 3 (18 vs 53%; P = 0.02). The 1 year incidence of CDI (5–18%), pneumonia (30–42%), BSI (32–55%) and CARVs (28–53%) between groups. There were no cases of IC in this cohort. 1 year infection attributable mortality was lower in group 1 (figure), compared with groups 2 and 3 (9%, 62% and 39%, respectively; P = 0.005).

CONCLUSION: Compared with ATG MMUD and haploidentical donor, PTCy MMUD HCT was associated with lower incidence of clinically significant CMV and lower infection attributable mortality. These findings might be related to the contemporary prophylactic strategies used in this patient population. Larger studies are needed.

Table 1: Patients with early post-surgical infections in kidney transplant recipients

| Variable | (No.) | P-value |
|----------|-------|---------|
| Age (years) | (n = 125) | 0.002 |
| Gender | | |
| Male | 100 (80.0%) | 0.88 |
| Female | 25 (20.0%) | |
| Race | | |
| White | 64 (51.2%) | 0.36 |
| Black | 41 (32.8%) | |
| Hispanic | 15 (12.0%) | |
| Other | 5 (4.0%) | |
| History of diabetes | 50 (40.0%) | 0.006 |
| CVA/CNVA | 13 (10.4%) | 0.006 |
| Hypertension | 22 (17.6%) | |
| Sarcopenia | | |
| No | 79 (63.2%) | 0.006 |
| Yes | 46 (36.8%) | |

Conclusion: Compared with ATG MMUD and haploidentical donor, PTCy MMUD HCT was associated with lower incidence of clinically significant CMV and lower infection attributable mortality. These findings might be related to the contemporary prophylactic strategies used in this patient population. Larger studies are needed.

Table 2: Microorganisms associated with infections among patients undergoing kidney transplantation

| Microorganism | No. of cases |
|---------------|-------------|
| Candida parapsilosis | 3 |
| Enterococcus faecalis | 2 |
| Enterococcus faecium | 2 |
| Staphylococcus epidermidis | 1 |
| Pseudomonas aeruginosa | 1 |

CONCLUSION: Sarcopenia was associated with an increased risk of early post-surgical infections in kidney transplant recipients.