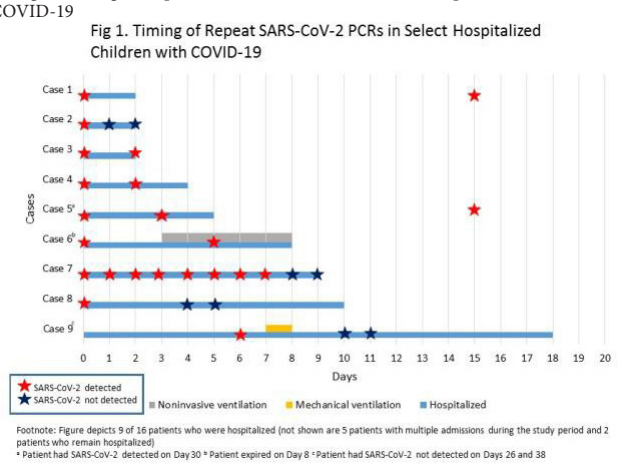
Fig 1. Timing of Repeat SARS-CoV-2 PCRs in Select Hospitalized Children with COVID-19



Footnote: Figure depicts 9 of 16 patients who were hospitalized (not shown are 5 patients with multiple admissions during the study period and 2 patients who remain hospitalized)
* Patient had SARS-CoV-2 detected on Day 30 ^ Patient expired on Day 8 ^ Patient had SARS-CoV-2 not detected on Days 26 and 38

Conclusion: We observed variation in the duration of SARS-CoV-2 rt-PCR positivity in children with COVID-19. For children with COVID-19, a single negative molecular assay for SARS-CoV-2 may not be predictive of sustained negativity.

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529. COVID-19 Antibody Responses in Solid Organ Transplant Recipients

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Session: P-20. COVID-19 Special Populations

Background: Studies to date indicate that most adults develop IgG antibody to severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) within 6 weeks of COVID-19 symptom onset. The seroconversion rate of solid organ transplant recipients (SOTR) following COVID-19 is unknown. Elucidation of humoral immune responses following COVID-19 in SOTR may inform risk of reinfection and the development of safe and effective vaccines for immunocompromised hosts.

Methods: We assessed the frequency of SARS-CoV-2 IgG detection among adult SOTR diagnosed with COVID-19 by nasopharyngeal PCR assays between 3/1/2020 and 6/5/2020. SARS-CoV-2 IgG was detected in serum using the Abbott IgG assay at the manufacturer's recommended cut-off. Our primary objective was the frequency of SARS-CoV-2 IgG seropositivity after COVID-19. A secondary objective was to identify clinical factors associated with seroconversion. The mean age and nadir absolute lymphocyte count (ALC) were calculated between seropositive and negative SOTR and compared by Student's t-test.

Results: Among 93 SOTR diagnosed with COVID-19, 19 died before SARS-CoV-2 IgG testing could be performed, and 18 had testing pending as of abstract submission. 56 SOTR (44 kidney, 5 heart, 4 liver, 1 lung, and 1 heart-kidney recipients) completed testing and were included in the analysis. Median age was 58 years (IQR 49.5–67), and all received maintenance immunosuppression at the time of COVID-19 diagnosis with median nadir ALC during illness of 400 (IQR 200–600). SARS-CoV-2 IgG testing was performed at a median of 60 days (IQR 50–70) from symptom onset, the shortest interval being 16 days. 47 out of 56 SOTR tested positive for SARS-CoV-2 IgG. The likelihood of seroconversion was not different between those who were tested at < or ≥ 60 days from symptom onset (p=0.26), nor did it vary significantly by age (p =0.59), gender (p=0.53) or nadir ALC (p =0.28).

Conclusion: 83% of evaluated SOTR with COVID-19 disease had detectable SARS-CoV-2 IgG in serum at a median of 60 days after symptom onset. Studies are ongoing to identify variables associated with poor antibody response among the nearly 20% of SOTR in this cohort who failed to seroconvert. The significance of seroconversion on risk of reinfection and vaccine immunogenicity remains to be determined.

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530. COVID-19 in kidney transplant recipients: Single-center experience and case-control study

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Session: P-20. COVID-19 Special Populations

Background: Organ transplant recipients (OTR) are considered high-risk for morbidity and mortality from COVID-19. Case-fatality rates (CFR) vary significantly in different case series, and some patients were still hospitalized at the time of analyses. To our knowledge, no case-control study of COVID-19 in OTR has been published to-date.

Methods: We captured kidney transplant recipients (KTR) diagnosed with COVID-19 between 3/1 and 5/18/2020. After exclusion of KTR on hemodialysis and off immunosuppression (IS), we compared the clinical course of COVID-19 between hospitalized KTR and non-transplant patients, matched by sex and age (controls). All patients were discharged from the hospital or died.

Results: 16 KTR had COVID-19. All 3 KTR off IS, who were excluded from further analyses, survived. Median age was 54 (range: 34–65) years; 5/13 KTR (38.4%) were men. Median time from transplant was 41 (range: 1–203) months. Two KTR, both transplanted >10 years ago, were managed as outpatients. IS was reduced in 12/13 (92.3%), most often by discontinuation of the antimetabolite. IL6 levels were >1,000 (normal: < 5) pg/mL in 3 KTR. Tacrolimus or sirolimus levels were >10 ng/mL in 6/9 KTR (67%) (Table 1). Eleven KTR were hospitalized (84.6%) and matched with 44 controls. One KTR, the only one treated with hydroxychloroquine, died (CFR 5.8%; 7.6% in KTR on IS; 9% in hospitalized KTR on IS). Four controls died (CFR: 9%; state CFR: 5.2%; inpatient CFR: 16.6%). There were no significant differences in length of stay or worst oxygenation status between hospitalized KTR and controls. Four KTR (30.7%), received remdesivir, 4 convalescent plasma, 3 (23%) tocilizumab. KTR received more often broad-spectrum antibiotics, convalescent plasma or tocilizumab, compared to controls (Table 2).

Table 1

Table 1. Characteristics of KTR still on IS with COVID-19.

ID	Age (y)	Sex	Tx (m)	Conv. plasma	RDV	IL6max (pg/mL)	Toci	Hcl	Abx	LOS (d)	Worst O_2	Ordinal Scale	Tacro/sirolimus trough (ng/mL)	
													Baseline	Highest
T1	55	M	37	+	-	1,487.81	+	-	-	7	HF	3	11.3	11.3
T2	35	F	20	+	+	303.61	+	-	+	24	MV	2	17.1	17.6
T3	68	F	37	-	+	-	-	-	+	11	RA	5	7.8	7.8
T4	34	F	41	-	-	-	-	-	+	6	LF	4	-	-
T5	44	M	59	-	+	2,243.02	+	-	+	13	LF	4	7.8	17.3
T6	36	M	1	+	+	157.53	-	-	+	15	HF	3	8.8	22.2
T7	61	F	25	-	-	1,377.84	-	+	+	10	DE	1	11.6	19.9
T8	58	F	195	-	-	-	-	-	+	2	RA	5	-	-
T9	65	F	31	+	-	20.05	-	-	+	8	RA	5	2.3*	6.2
T10	54	F	120	-	-	-	-	-	-	0	RA	5	-	-
T11	43	M	56	-	-	-	-	-	+	8	LF	4	3.9	9.2
T12	65	F	99	-	-	-	-	-	+	6	MV	2	17.1	17.1
T13	50	M	203	-	-	-	-	-	-	0	RA	5	-	-

Table Footnotes: Shaded: Outpatient management; y: years; Ordinal (modified WHO) scale: 1, dead (DE); 2, mechanical ventilation (MV); 3, high-flow O_2 (HF); 4, low-flow O_2 (LF); 5, RA; Tx, transplant (m, months prior to COVID-19 diagnosis); RDV, remdesivir; Toci, tocilizumab; Hcl, hydroxychloroquine (± azithromycin); Abx, broad-spectrum antibacterials; LOS, length of stay (d, days); Infx, infection; *First dose held until the level was back.

Table 2

Table 2. Comparison between hospitalized KTR on IS with COVID-19 and controls. Data are presented as n (%) or median (range) and compared with x^2, Fisher's exact or Mann-Whitney tests. Abbreviations as in the abstract and Table 1.

Parameter	KTR	Controls	P-value
n	11	44	---
Age (years)	55 (34-68)	55 (33-68)	0.974
Men	4 (36.3)	17 (38.6)	0.835
Outcomes			
Mortality	1 (9)	4 (9)	0.557
LOS (days)	8 (1-24)	9 (1-44)	0.825
LOS (days) among survivors	7.5 (1-24)	8.5 (1-44)	0.836
Worst O_2 status (ordinal scale)	4 (1-5)	4 (1-5)	0.991
Treatment modalities			
Convalescent plasma	4 (30.7)	0 (0)	**0.001**
Remdesivir	4 (30.7)	12 (27.2)	0.823
Tocilizumab	3 (23)	0 (0)	**0.006**
Hydroxychloroquine	1 (9)	7 (15.9)	0.924
Broad-spectrum antibacterials	10 (90.9)	27 (61.3)	0.080

Conclusion: Unlike early reports from the pandemic epicenters, the clinical course and outcomes of KTR with COVID-19 in our small case series were comparable to those of non-transplant patients. Calcineurin or mTOR inhibitor levels were high, likely due to diarrhea and COVID-19-related hepatic dysfunction. Extremely high IL6 levels were common. The role of IS and potential benefits from investigational treatments remain to be elucidated. A larger multi-institutional study is underway.

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531. COVID-19 infection outcome in African American Renal Transplant recipients: Detroit Medical Center experience

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