**Methods.** All confirmed COVID-19 cases who presented at OLVG hospital in Amsterdam during the first wave of the COVID-19 pandemic were invited to participate in our prospective observational cohort study. The participants were divided into three subgroups: patients not admitted, admitted to the general ward and admitted to the ICU. Questionnaires were sent at 3, 6 and 12 months after presentation. We used the Research and Development – 36-item health survey, the Hospital Anxiety and Depression Scale and the PTSS Checklist for DSM-5. We compared the RAND-36 scores at the timepoints with a Dutch healthy control population in 2020 and between the three subgroups using the Kruskal-Wallis test and the Mann-Whitney U test.

**Results.** Of the 466 confirmed cases, 75 patients died of COVID-19, 64 patients were lost to follow up and 12 patients were excluded because they were unable to complete the questionnaires due to mental illness or cognitive impairment, they moved back to their home country or refused to participate. Of the remaining 315 patients, 182 (57.8%) completed the questionnaires at 3 months. Subsequently, 163 patients provided informed consent for follow up. At 6 and 12 months, 98 (60.1%) and 131 (80.4%) completed the survey. The average score of all domains at 3 months was 58, compared to 79 at twelve months and 81 in the control group. There was a statistically significant increase from 3 and 12 and 6 and 12 months (figure 1). At twelve months participants recovered to levels of the healthy control group (N=459), except for the ICU group, who still experienced bodily pain and decreased physical function. The improvement was most noticeable in the domains of social functioning, role limitations–physical and role limitations–emotional. The percentage of patients with abnormal total HADS scores (cutoff at 16) and PCL-5 scores (cutoff at 33) at 3 months decreased from 27.8 to 22.1% and 18.9 to 7.6% at 12 months, respectively (figure 2 and 3).

**Figure 1. RAND-36: Health-related quality of life after COVID-19 of all patients.**

| Health-related quality of life | all patients |
|--------------------------------|--------------|
| 3m (N=182)                     | 27.8         |
| 6m (N=96)                      | 22.1         |
| 12m (N=131)                    | 20.3         |
| Control (N=455)                | 35.4         |

The blue column is after 3 months, orange line is after 6 months, green line is after 12 months, yellow line is healthy control. The p-value in the right-upper corner shows statistical significant difference between all total scores, the asterisks indicate significance between groups. PF = physical functioning; SF = social functioning; RP = role limitations–physical; RE = role limitations–emotional; MH = mental health; VT = vitality; BP = pain; GH = general health; HC = health change.

**Table 1.** Univariable Analysis of Predictors for Readmission within 30 days from Hospitalization with COVID-19

| Characteristics                                      | No-readmission (n=339) | Readmission (n=52) | OR (95% CI) | p value |
|-------------------------------------------------------|------------------------|--------------------|-------------|---------|
| Mean Age                                              | 61.0±15.0              | 66.3±18.6          | 0.63        | 0.03    |
| Sex, n (%)                                            |                         |                    |             |         |
| Female                                                | 169 (49.9)             | 29 (55.8)          | 0.80 (1.16, 1.41) | 0.43 |
| Male                                                  | 170 (50.1)             | 23 (44.2)          |             |         |
| Race, n (%)                                           |                         |                    |             |         |
| White                                                 | 62 (18.4)              | 11 (21.2)          |             |         |
| Black                                                 | 267 (79.2)             | 41 (78.8)          |             |         |
| Other                                                 | 8 (2.4)                | 0 (0)              |             |         |
| Admission source, n (%)                               |                        |                    |             |         |
| Emergency                                             | 263 (77.6)             | 33 (63.5)          | 2.01 (1.37, 2.93) | 0.03 |
| Other                                                 | 76 (22.4)              | 19 (36.5)          |             |         |
| Insurance type, n (%)                                  |                        |                    |             |         |
| Commercial                                            | 109 (32.2)             | 8 (15.4)           | 3.51 (1.58, 8.80) | 0.002 |
| Public                                                | 230 (67.8)             | 46 (84.6)          |             |         |
| Comorbidities, n (%)                                  |                        |                    |             |         |
| 1 or more comorbidity                                  | 316 (93.2)             | 52 (100)           | 2.12 (1.1, 1.72) | 0.003 |
| Congestive heart failure                              | 53 (15.7)              | 15 (30.6)          | 3.11 (1.56, 6.24) | 0.003 |
| Elevated creatinine from baseline                     | 115 (34.2)             | 19 (37.5)          | 1.34 (0.72, 2.47) | 0.47 |
| Low serum albumin (<45 g/dL)                          | 119 (36.4)             | 27 (51.9)          | 1.91 (0.94, 3.78) | 0.04 |
| Rhabdomyolysis                                         | 8 (2.4)                | 2 (7.9)            |             |         |

The blue column is after 3 months, the orange after 6 months and the green after 12 months. The numbers above the columns are percentages per group.

**Conclusion.** Although, COVID-19 may cause a decreased health-related quality of life and impaired mental health, this study shows important recovery up to normal levels after one year.

**Disclosures.** All Authors: No reported disclosures

36. Clinical Features of and Risk Factors for 30-day Readmission after an Initial Hospitalization with COVID-19

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**Session:** O-07. COVID-19 Complications, Co-infections and Clinical Outcomes 2

**Background.** Little is known about risk factors for readmission after COVID-19 hospitalizations. Knowledge of these factors may help to identify patients at increased risk and may help to prevent these rehospitalizations.

**Methods.** This historical cohort study was conducted at a tertiary care academic medical center. We included COVID-19 cases diagnosed by reverse-transcriptase polymerase-chain-reaction (RT-PCR) assay between March 4th and June 14th, 2020. Patients readmitted within 30 days were identified. Using the electronic medical record, we collected data on demographic and clinical information. Data were analyzed using Student’s t-test, the chi squared test and multivariable logistic regression.

**Results.** We included 391 patients who survived after the index hospitalization for COVID-19. The readmission rate was 13.3% (52/391). The mean time to readmission was 9.2 ± 7.9 days. The mean age (±SD) was 66.3 ± 18.6 years, 44.2% were male, and 78.8% were black/African-American. The most common presenting complaint was shortness of breath (50%). The most frequent diagnosis during the readmission was infections process (57.7%). The mortality rate on readmission was 11.5%. Patients with a 30-day readmission were older than those not readmitted, mean age (±SD) 66.3 ± 18.6 vs. 61.0 ± 16.0, respectively (p=0.03). Readmitted patients also had a higher prevalence of heart failure and renal disease as comorbidities. Elevated alanine aminotransferase (AST) and low albumin level were also associated with readmission (Table 1). Intensive care unit (ICU) admission or mechanical ventilation during the index admission did not increase the risk of readmission. From multivariable analysis, independent predictors of 30-day readmission were higher Charlson co-morbidity index, age >50, readmission within 6 days from initial hospitalization and presence of rhabdomyolysis during the index hospitalization (p<0.003) (Table 2).

**Table 1.** Univariable Analysis of Predictors for Readmission within 30 days from COVID-19 Infection

| Characteristics | Odds ratio (95% CI) | p value |
|-----------------|---------------------|---------|
| Sex             | 2.12 (1.1, 1.72)    | 0.003   |
| Race            | 3.11 (1.56, 6.24)   | 0.003   |
| Insurance type  | 1.34 (0.72, 2.47)   | 0.47    |
| Comorbidities   | 2.12 (1.1, 1.72)    | 0.003   |
| Elevated creatinine from baseline | 1.34 (0.72, 2.47) | 0.47    |
| Low serum albumin (<45 g/dL) | 1.91 (0.94, 3.78) | 0.04    |
| Rhabdomyolysis  | 2 (7.9)             |         |

Although, COVID-19 may cause a decreased health-related quality of life and impaired mental health, this study shows important recovery up to normal levels after one year.
Table 2. Multivariable Analysis of Predictors for Readmission within 30 days from COVID-19 Infection

| Variables                  | OR (95% CI)    | p value |
|---------------------------|----------------|---------|
| CWI at hospital admission | 1.21 (1.06, 1.39)| 0.004  |
| Creatinine on admission   | 1.12 (1.03, 1.21)| 0.009  |
| Rhabdomyolysis            | 3.84 (1.07, 13.78)| 0.04   |

Abbreviations: OR: Odds ratio, CI: Confidence interval, CWI: Charlson weighted index of comorbidity

**Conclusion.** In our cohort, infectious etiologies were common among those readmitted within 30 days of COVID-19. A higher Charlson score, acute renal failure, and rhabdomyolysis during the index admission were independent predictors of a 30-day readmission. Further studies are required to investigate these contributing factors.

**Disclosures.** All Authors: No reported disclosures

37. Allogeneic, Off-the-Shelf, SARS-CoV-2-specific T Cells Demonstrate Reactivity Against Emerging Variant Strains

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38. Remdesivir Treatment in Patients Hospitalized with COVID-19: A Comparative Analysis of In-Hospital All-Cause Mortality

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**Session:** O-08. COVID-19 Treatment & Diagnostics

**Background.** The impact of COVID-19 has been profound with >170,000,000 confirmed cases worldwide and emerging variants being a cause of global concern. Defects in T-cell function and trafficking have been described among those with severe illness, and immunodeficiency is a risk factor for persistent viral shedding and prolonged symptoms. Because of our prior clinical data demonstrating that allogeneic, off-the-shelf virus-specific T cells (VSTs) can safely and effectively treat viral infections, we investigated the feasibility of targeting COVID-19 using banked, SARS-CoV-2-specific VST.

**Methods.** We first screened PBMCs from convalescent individuals against 18 structural and non-structural/accessory (NSPs/APs) SARS-CoV-2 proteins and identified 5 (Spike (S), Membrane (M), Nucleoprotein (N), NSP4, and A7F7a) as immunodominant which were then advanced to our VST production process.

**Results.** Using overlapping peptide libraries spanning these antigens as a stimulus, we achieved a mean 7.6±0.9 fold expansion (n=13) of VSTs (96±0.5%), with a mixture of cytotoxic (CD8+) and helper (CD4+) T cells that expressed activation and central/effect memory markers. These VSTs were potent, Th1-polarized and poly-functional, producing IFNγ, TNFα, GM-CSF and Granzyme B. Moreover, the VSTs were able to recognize other clinically important variants including B1.1.7 (UK), B1.351 (South Africa) and P1 (Brazil). This demonstrates the cross-reactive potential of these polyclonal and diverse VSTs, which were developed to provide potent antiviral activity, attesting to their virus selectivity and safety for clinical use (Figure 1).

**Conclusion.** In conclusion, it is feasible to generate polyclonal SARS-CoV-2 VSTs that provide coverage against variant strains using GMP-compliant manufacturing methodologies. We have advanced this product to the bedside for administration in a Phase I, randomized clinical trial [VST+ standard of care (SOC) vs SOC] in high-risk patients hospitalized with COVID-19 (NCT04401410).

**Disclosures.** Spyridoula Vasileiou, PhD, AlloVir (Consultant) Manik Kuvalkar, MSc, AlloVir (Consultant) Astor Workineh, MSc, AlloVir (Employee) Ayumi Watanabe, BSc, AlloVir (Consultant) Tessa Therapeutics (Consultant) Novartis (Consultant) Helen Elisabeth Hedlop, MD, AlloVir (Shareholder)/Cell Medica (Grant/Research Support)/Gilead Sciences (Consultant)/Kiadis Pharma (Consultant)/Marker Therapeutics (Consultant, Shareholder)/Novartis (Consultant/PACT Pharma (Consultant)/Tessa Therapeutics (Consultant, Research Grant, Collaborator)/Premal Lulla, MD, Johnson & Johnson (Shareholder)/Ann Marie Leen, PhD, AlloVir (Consultant, Shareholder)/Marker Therapeutics (Consultant, Shareholder)

**O-07. COVID-19 Complications, Co-infections and Clinical Outcomes 2**

**Session:** O-07. COVID-19 Complications, Co-infections and Clinical Outcomes 2

**Background.** Defects in T-cell function and trafficking have been described among those with severe illness, and immunodeficiency is a risk factor for persistent viral shedding and prolonged symptoms. Because of our prior clinical data demonstrating that allogeneic, off-the-shelf virus-specific T cells (VSTs) can safely and effectively treat viral infections, we investigated the feasibility of targeting COVID-19 using banked, SARS-CoV-2-specific VST.

**Methods.** We first screened PBMCs from convalescent individuals against 18 structural and non-structural/accessory (NSPs/APs) SARS-CoV-2 proteins and identified 5 (Spike (S), Membrane (M), Nucleoprotein (N), NSP4, and A7F7a) as immunodominant which were then advanced to our VST production process.

**Results.** Using overlapping peptide libraries spanning these antigens as a stimulus, we achieved a mean 7.6±0.9 fold expansion (n=13) of VSTs (96±0.5%), with a mixture of cytotoxic (CD8+) and helper (CD4+) T cells that expressed activation and central/effect memory markers. These VSTs were potent, Th1-polarized and poly-functional, producing IFNγ, TNFα, GM-CSF and Granzyme B. Moreover, the VSTs were able to kill pepmix-loaded autologous targets with no evidence of auto- or allo-reactivity, attesting to their virus selectivity and safety for clinical use (Figure 1).

**Conclusion.** In conclusion, it is feasible to generate polyclonal SARS-CoV-2 VSTs that provide coverage against variant strains using GMP-compliant manufacturing methodologies. We have advanced this product to the bedside for administration in a Phase I, randomized clinical trial [VST+ standard of care (SOC) vs SOC] in high-risk patients hospitalized with COVID-19 (NCT04401410).

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