

Supplementary Table 1 Pathological subgroups across the kidney biopsies in COVID-19 cases

| No | Pathology | Numbers reported |
|-----------------------------------|--|------------------|
| Native kidney biopsies | | |
| 1 | Collapsing focal segmental glomerular sclerosis | 19 |
| 2 | Acute tubular injury | 14 |
| 3 | Thrombotic microangiopathy | 8 |
| 4 | ANCA associated vasculitis | 3 |
| 5 | Anti-glomerular basement membrane (anti-GBM) disease | 2 |
| 6 | IgA vasculitis | 2 |
| 7 | Lupus Nephritis | 1 |
| 8 | Minimal change disease | 1 |
| 9 | Membranous nephropathy | 2 |
| 10 | Oxalate nephropathy | 3 |
| 11 | Post infectious glomerulonephritis | 1 |
| 12 | Pigment nephropathy | 2 |
| 13 | Atypical Hemolytic Uremic Syndrome | 1 |
| 14 | Granulomatous Interstitial Nephritis | 1 |
| Transplant kidney biopsies | | |
| 1 | T-cell mediated rejection | 1 |
| 2 | Antibody mediated rejection | 3 |
| 3 | Acute tubular injury | 3 |
| 4 | Focal segmental glomerulosclerosis | 3 |

| | | |
|-----------------------------|---|-----|
| 5 | Collapsing focal segmental glomerulosclerosis | 2 |
| 6 | Transplant infarction | 2 |
| 7 | Thrombotic microangiopathy | 1 |
| Post-mortem biopsies | | |
| 1 | Acute tubular injury | 144 |
| 2 | Chronic inflammation | 44 |
| 3 | Thrombotic microangiopathy | 17 |
| 4 | Focal segmental glomerulosclerosis (FSGS) | 6 |
| 5 | Pigment nephropathy | 3 |
| 6 | Immunoglobulin A (IgA) nephropathy | 1 |
| 7 | Oxalosis | 2 |
| 8 | Post infectious glomerulonephritis | 1 |
| 9 | Collapsing FSGS | 1 |

IgA: Immunoglobulin A.

Supplementary Table 2 Native kidney biopsy outcomes of thrombotic microangiopathy in COVID-19 cases

| Ref. | Age | Sex | Ethnicity | Comorbidities | Renal Px | Px Creatinine | Px Proteinuria | Blood test | Treatment Received | Outcome (renal/survival) | RRT needed | Time to biopsy |
|-------------------------------------|-----|-----|-----------|--|--------------------|---------------|----------------|---|---|--------------------------|------------|----------------|
| Shar ma et al ^[14] | 45 | F | B | HTN, peritoneal carcinomatosis from cervical Ca on gemcitabine, PE, bilateral nephrostomy | AKI, TM A | 7.4 | 5.7 | High LDH, low haptoglobin, thrombocytopenia, IgG Coombs positive, ADAMTS-13 activity 28.8% | Steroids, rituximab | Died | Yes | - |
| Shar ma et al ^[14] | 69 | F | C | Asthma | AKI, Prot, TM A | 0.7 | 1.4 | Anemia, thrombocytopenia, high LDH, low haptoglobin, low factor H, | Tocilizumab/anakinra, steroids, hydroxychloroquine, convalescent plasma, then eculizumab | Died | Yes | Day 20 |

| | | | | | | | | | | | | |
|--------------------------------------|----|---|---|--|------------------------|------|-------|---|-----------------------------------|-----------------------|-----------|-----------|
| | | | | | | | | high CBb and C5b-9 in sera | | | | |
| Akiles h et al ^[17] | 58 | M | B | Nil | AKI, NRP | 11.3 | 4 | | Discharged | Yes | Day 4 | |
| Akiles h et al ^[17] | 47 | M | B | HTN | AKI, TM A | 6.6 | 7.6 | 'concern for TMA' | Discharged | Yes | Day 25 | |
| Akiles h et al ^[17] | 63 | F | B | HTN, gemcitabine for adenocarcino ma | AKI, NRP | 6 | 20 | Anemia, thrombocytope nia, normalC3/C4 & ADAMTS13 | Dialysis dependent | Yes | Day 10-14 | |
| Akiles h et al ^[17] | 77 | F | H | HTN, T2DM | AKI, NS, TM A | 3.99 | 13.41 | Low C3, low haptoglobin, high d-dimer and LDH | Dialysis dependent | Yes | Day 3 | |
| Akiles h et | 34 | M | H | HTN | AKI, TM | 11.4 | 2.1 | Anemia, thrombocytope | PLEX, eculizumab, prednisolone | Dialysis dependent | Yes | 4-5 wk |

al^[17]

A

nia,
schistocytes,
elevated d-
dimer

ADAMTS13: α disintegrin and metalloproteinase with a thrombospondin type 1 motif member 13; AKI: Acute kidney injury; B: Black; Ca: Cancer; C: Caucasian; F: Female; H: Hispanic; HTN: Hypertension; IgG: Immunoglobulin G; LDH: Lactate dehydrogenase; M: Male; NRP: Nephrotic range proteinuria; NS: Nephrotic syndrome; PE: Pulmonary embolus; PLES: Plasma exchange; Prot: Proteinuria; Px: Presentation; T2DM: Type 2 diabetes mellitus; TMA: Thrombotic microangiopathy.