Aims

Each week a brief report will be circulated. The aim is to share information and learning points from clinic cases with COVID-19.

How to submit cases

A new module of the UKIVAS registry is being developed for the purposes of submitting cases. A paper version of the reporting form has been disseminated allowing cases to be submitted before the module is live and so sites not yet recruiting for UKIVAS can also share information.

Please submit cases, comments or questions to the UKIVAS COVID-19 group at gg-uhb.vasculitis-covid@nhs.net.

Cases

We are grateful to colleagues for sharing the details of the following initial patients with vasculitis and C-19 infection.

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age / sex</th>
<th>Vasculitis diagnosis</th>
<th>Disease activity</th>
<th>Other medical history</th>
<th>Current treatment</th>
<th>ACEI / ARB / NSAID</th>
<th>Presentation</th>
<th>Management</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>72 year old Male</td>
<td>GPA (PR3) since 2012</td>
<td>Remission</td>
<td>AF, CVA, HTN, Renal disease, VTE</td>
<td>Rituximab</td>
<td>ACE-i</td>
<td>Fever, malaise, cough, dyspnoea. Acute respiratory failure and AKI. CRP 142, Creat 158</td>
<td>Supportive care, supplemental oxygen</td>
<td>Discharged</td>
</tr>
<tr>
<td>9</td>
<td>78 year old Male</td>
<td>GPA (PR3) since 2013</td>
<td>Remission</td>
<td>CVA, HTN, VTE, pulmonary HTN, Dementia</td>
<td>Mycophenolate Mofetil</td>
<td>ARB</td>
<td>Malaise, myalgia, conjunctivitis. Mild ground glass changes on CT. CRP 139, PR3 551U/ml</td>
<td>Supportive care. MMF withheld, antibiotics given</td>
<td>Discharged</td>
</tr>
</tbody>
</table>
### Patient 10

**Age / sex** | 70 year old Female  
**Vasculitis diagnosis** | PR3-AAV since Nov 2019  
**Disease activity** | Remission  
**Other medical history** | Recent Shingles Feb 2020  
**Current treatment** | Azathioprine (since 27/03) and Prednisolone 7.5mg  
| Recent induction with x6 CYC  
**ACEI / ARB / NSAID** | Unclear  
**Presentation** | Clinic attendance- with cough, dyspnoea, lack of appetite, nausea.  
| SpO2 95% OA, CXR clear. AZA withheld. Two days later admitted with SpO2 88% on 2L  
**Management** | High flow oxygen given and antibiotic cover for CAP  
**Outcome** | Improving – remains IP

### Patient 11

**Age / sex** | 53 year old Female  
**Vasculitis diagnosis** | MPA since Sept 2019  
**Disease activity** | Remission  
**Other medical history** | Nil  
**Current treatment** | Azathioprine 150mg and Prednisolone 5mg  
| Previous RTX induction  
**ACEI / ARB / NSAID** | Unclear  
**Presentation** | Dyspnoea. CRP 170, CXR multi-focal consolidation.  
**Management** | Supplemental oxygen and antibiotics given for secondary pneumonia  
**Outcome** | Improving – remains IP

### Patient 12

**Age / sex** | 54 year old Male  
**Vasculitis diagnosis** | PR3-AAV since Dec 2019  
**Disease activity** | Active  
**Other medical history** | Inpatient since Dec 2019 with new AAV. X2 CYC – developed spontaneous colic artery rupture and GI bleed, perforated gastric ulcer- intra abdominal collections. Severe LVSD (no CAD)  
**Current treatment** | IVIG  
**ACEI / ARB / NSAID** | Unclear  
**Presentation** | Whilst IP for above developed C-19  
**Management** | Supportive, ward based care (no significant oxygen requirement)  
**Outcome** | Remains IP

### Patient 13

**Age / sex** | 82 year old Male  
**Vasculitis diagnosis** | PR3-AAV since Feb 2020  
**Disease activity** | Active  
**Other medical history** | CVA, IHD, T2DM  
**Current treatment** | Recent Induction with CYC x3  
**ACEI / ARB / NSAID** | Unclear  
**Presentation** | Cough, dyspnoea  
**Management** | Supportive, ward based care  
**Outcome** | Remains IP
Patient 14
Age / sex 76 year old Male
Vasculitis diagnosis PR3-AAV since 2015
Disease activity Remission
Other medical history CVA, IHD, DM, renal disease
Current treatment Azathioprine and Prednisolone 5mg
ACEI / ARB / NSAID Nil
Presentation Malaise, cough, dyspnoea. Developed secondary bacterial infection with sepsis, severe anaemia and AKI. CRP 116, Create 562, PR3 7.7. Imaging showing pleural effusion and consolidation.
Management Supportive care. Azathioprine withheld. Antibiotics given, dialysis
Outcome Cardiac arrest- deceased

Patient 15
Age / sex 47 year old Male
Vasculitis diagnosis EGPA (MPO positive) since 2018
Disease activity Remission
Other medical history Diabetes, renal disease
Current treatment Rituximab
ACEI / ARB / NSAID ACE-i
Presentation Fever (41°C), malaise, sore throat, cough, dyspnoea. Acute respiratory failure, secondary infection (consolidation on CXR) and sepsis (no pathogen isolated), hyperglycaemia. CRP 109
Management Supportive care, supplemental oxygen and antibiotics
Outcome Remains IP

Patient 16
Age / sex 76 year old Male
Vasculitis diagnosis GPA (PR3) since 2001
Disease activity Remission
Other medical history HTN, renal disease, VTE
Current treatment Mycophenolate Mofetil
ACEI / ARB / NSAID ARB
Presentation Fever, malaise, cough, dyspnoea. Acute respiratory failure, AKI. CRP 114, Creat 321
Management Supportive care, supplemental oxygen, MMF withheld
Outcome Remains IP

Patient 17
Age / sex 78 year old Female
Vasculitis diagnosis PAN since 2011
Disease activity Remission
Other medical history Renal disease
Current treatment Azathioprine
ACEI / ARB / NSAID Nil
Presentation Malaise, nausea, diarrhoea. Inflammatory changes on chest imaging
Management Supplemental oxygen, antibiotics given. Azathioprine withheld
Outcome Recovered and discharged
Patient 18
Age / sex 78 year old male
Vasculitis diagnosis MPO-AAV & Anti-GBM since Oct 2019
Disease activity Minimal/low
Other medical history DM, renal disease, ILD (silicosis), IHD- MI, gout, mental health issues
Current treatment Prednisolone 15mg
Dialysis dependent from presentation. CYC induction complicated by HAP. CYC stopped and weaning steroids
ACEI / ARB / NSAID Nil
Presentation Inpatient for IX for GI bleed. Developed fever, productive cough, dyspnoea (RR >24). Bilateral consolidation and effusions on imaging. Strep bacteraemia. Found C-19 positive
Management Supportive care. Supplemental oxygen. Prednisolone reduced to 10mg. Antibiotics given
Outcome Recovered and discharged

Patient 19
Age / sex 72 year old Male
Vasculitis diagnosis PR3-AAV since Feb 2020
Disease activity Moderate
Other medical history Gout
Current treatment Oral CYC and Prednisolone 40mg
ACEI / ARB / NSAID Nil
Presentation Presented with dyspnoea (RR >24). Confirmed PE and new AF. Whilst IP found to have C-19 pneumonitis. Imaging embolism, nodules and consolidation. Create 479
Management Supportive care. High flow oxygen. Prednisolone reduced and CYC stopped. Antibiotics given
Outcome Frailty and rapid deterioration despite - end of life care- deceased

Patient 20
Age / sex 62 year old Male
Vasculitis diagnosis PR3-AAV since March 2020
Disease activity Severe/ high
Other medical history HTN, renal disease, UC
Current treatment IV x1CYC Prednisolone 30mg
ACEI / ARB / NSAID Nil
Presentation New presentation- received 1x CYC with Pred. A week later developed cough, dyspnoea (RR >24), haemoptysis. Rapid deterioration. Acute respiratory failure, AKI, metabolic acidosis, severe anaemia. Admission to ICU, on invasive mechanical ventilation
Management Supportive care, antibiotics given. Vasopressor support. Prednisolone reduced, CYC stopped. Randomised in RECOVERY trial
Outcome Showing signs of recovery and possible wean off ventilator
Clinical characteristics of patients with confirmed COVID-19

<table>
<thead>
<tr>
<th></th>
<th>Critical outcome* n=6</th>
<th>Non-critical* outcome n=14</th>
<th>Total n=20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years) (mean ± SD)</td>
<td>69.3 ± 9.8</td>
<td>67.1 ± 13.5</td>
<td>67.5 ± 12.3</td>
</tr>
<tr>
<td>Female, n (%)</td>
<td>2 (33.3)</td>
<td>5 (35.7)</td>
<td>7 (35)</td>
</tr>
<tr>
<td>Comorbidities, n (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>2 (33.3)</td>
<td>5 (35.7)</td>
<td>7 (35)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1 (16.7)</td>
<td>6 (42.3)</td>
<td>7 (35)</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>3 (50)</td>
<td>6 (42.3)</td>
<td>9 (45)</td>
</tr>
<tr>
<td>Renal disease</td>
<td>4 (66.7)</td>
<td>6 (42.3)</td>
<td>10 (50)</td>
</tr>
<tr>
<td>Lung disease</td>
<td>1 (16.7)</td>
<td>1 (7.1)</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Vasculitis diagnosis, n (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MPA (or MPO- AAV)</td>
<td>2 (33.3)</td>
<td>2 (14.3)</td>
<td>4 (20)</td>
</tr>
<tr>
<td>GPA (or PR3-AAV)</td>
<td>4 (66.7)</td>
<td>8 (57.1)</td>
<td>12 (60)</td>
</tr>
<tr>
<td>EGPA</td>
<td>0 (0)</td>
<td>1 (7.1)</td>
<td>1 (5)</td>
</tr>
<tr>
<td>Undifferentiated AAV</td>
<td>0 (0)</td>
<td>1 (7.1)</td>
<td>1 (5)</td>
</tr>
<tr>
<td>Dual positive (Anti-GBM and MPO)</td>
<td>0 (0)</td>
<td>1 (7.1)</td>
<td>1 (5)</td>
</tr>
<tr>
<td>PAN</td>
<td>0 (0)</td>
<td>1 (7.1)</td>
<td>1 (5)</td>
</tr>
<tr>
<td>Disease Activity, n (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remission</td>
<td>4 (66.7)</td>
<td>8 (57.1)</td>
<td>12 (60)</td>
</tr>
<tr>
<td>Minimal / Low</td>
<td>0 (0)</td>
<td>3 (21.4)</td>
<td>3 (15)</td>
</tr>
<tr>
<td>Moderate</td>
<td>1 (16.7)</td>
<td>0 (0)</td>
<td>1 (5)</td>
</tr>
<tr>
<td>Severe/ High</td>
<td>1 (16.7)</td>
<td>3 (21.4)</td>
<td>4 (20)</td>
</tr>
<tr>
<td>Vasculitis current therapy, n (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recent Cyclophosphamide**</td>
<td>2 (33.3)</td>
<td>2 (14.3)</td>
<td>4 (20)</td>
</tr>
<tr>
<td>Rituximab</td>
<td>1 (16.7)</td>
<td>3 (21.4)</td>
<td>4 (20)</td>
</tr>
</tbody>
</table>
**Note**: *Critical outcome refers to ICU admission or death. Non-critical outcome refers to ward based care or recovery/discharge. ** Recent Cyclophosphamide therapy, given within 6 weeks of C-19 presentation*

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azathioprine</td>
<td>2 (33.3)</td>
<td>6 (42.3)</td>
<td>8 (40)</td>
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<tr>
<td>Mycophenolate</td>
<td>0 (0)</td>
<td>2 (14.3)</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Hydroxychloroquine</td>
<td>0 (0)</td>
<td>1 (7.1)</td>
<td>1 (5)</td>
</tr>
<tr>
<td>Prednisolone</td>
<td>4 (66.7)</td>
<td>6 (42.9)</td>
<td>10 (50)</td>
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<tr>
<td>IVIG</td>
<td>0 (0)</td>
<td>1 (7.1)</td>
<td>1 (5)</td>
</tr>
<tr>
<td>NSAID, n (%)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>ACEi/ARB, n (%)</td>
<td>1 (16.7)</td>
<td>7 (70)</td>
<td>8 (50)</td>
</tr>
</tbody>
</table>