Aim

Each week a brief report will be circulated. The aim is to share information and learning points from clinic cases with COVID-19. Please note these reports are intended for health professionals only and should not be distributed on social media.

Vasculitis COVID-19 cases

Reported	Died
32	13

How to submit cases

A new module of the UKIVAS registry for the purpose of submitting cases will soon be ready for testing. Please let us know if you would like to help test the new module before it goes live.

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 patients with vasculitis and C-19 infection.

Patient 9 - update

Age / sex	78 year old Male
Vasculitis diagnosis	GPA (PR3)
Disease activity	Remission
Other medical history	CVA, HTN, VTE, pulmonary HTN, dementia
Current treatment	Mycophenolate mofetil
ACEI / ARB / NSAID	ARB
Presentation	Malaise, myalgia, conjunctivitis. Mild ground glass changes on CT. CRP 139, PR3 55IU/ml
Management	Supportive care. MMF withheld, antibiotics given
Outcome	Discharged, later deceased
Update	Readmitted with fall and hypoxia. MMF had previously been replaced with prednisolone 10 mg, briefly increased to hydrocortisone 100 mg BD by medical team.

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Patient 22	
Age / sex	69 year old Female
Vasculitis diagnosis	EGPA
Disease activity	Minimal
Other medical history	Hypertension, severe aortic regurgitation (surgery postponed)
Previous treatment	Cyclophosphamide
Current treatment	Recent rituximab for relapse, minimal prednisolone
ACEI / ARB / NSAID	ARB
Presentation	Cough, breathlessness, negative swabs, but bilateral pneumonia consistent with COVID
Management	Antibiotics, supportive care, BIPAP, prednisolone stopped
Outcome	Improving slowly at home

Patient 23	
Age / sex	72 year old Male
Vasculitis diagnosis	MPA (MPO positive)
Disease activity	Remission
Other medical history	Diabetes, hypertension, ESRD on dialysis
Current treatment	Rituximab (B-cell deplete), prednisolone 5mg
ACEI / ARB / NSAID	ARB
Presentation	Fever, malaise, arthralgia, SOB, high respiratory rate
Management	Steroid increased, antibiotics, brief supplemental oxygen
Outcome	Improving at home, no evidence of seroconversion at week 3

Patient 24	
Age / sex	46 year old Female
Vasculitis diagnosis	GPA
Disease activity	Remission
Other medical history	Hypertension, mild lung disease, hypothyroidism, hyperlipidaemia, morbid obesity
Current treatment	Rituximab (B cell deplete), prednisolone 10 mg
ACEI / ARB / NSAID	ARB
Presentation	Fever, malaise, sore throat, cough, SOB, high respiratory rate
Management	Antibiotics, high flow oxygen
Outcome	Admitted at separate hospital to vasculitis team Died, local decision not to escalate to ITU

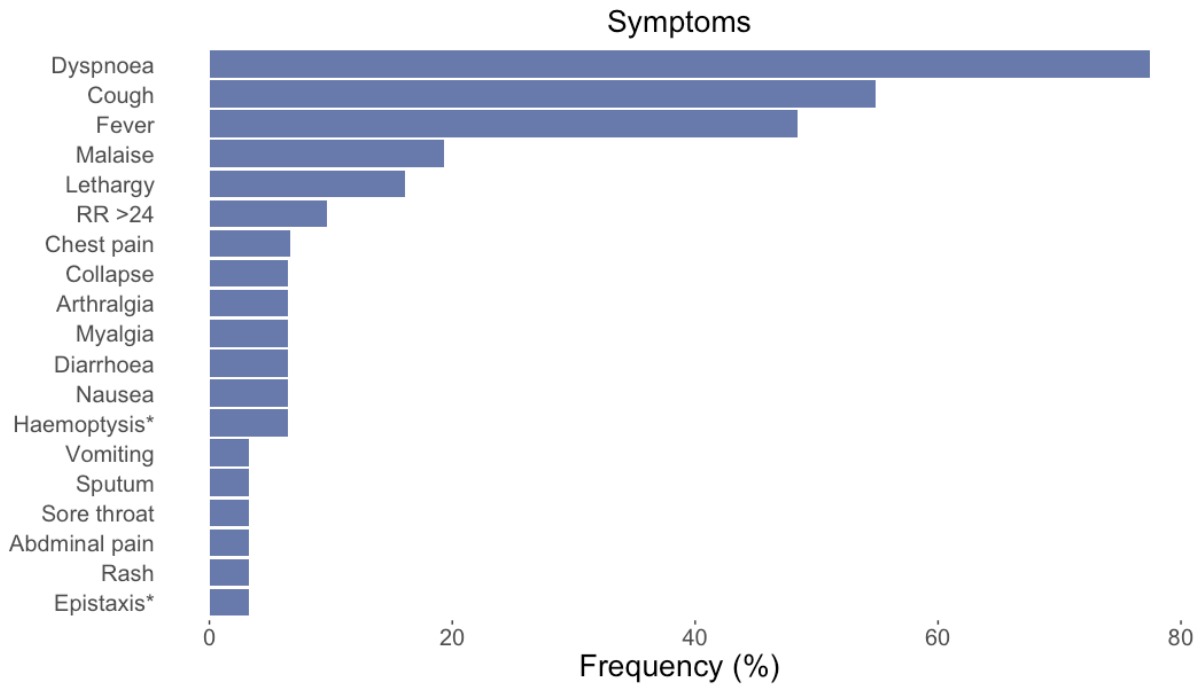
Patient 25	
Age / sex	49 year old Male
Vasculitis diagnosis	MPA (MPO positive)
Disease activity	Remission
Other medical history	Hypertension, renal transplant (Alemtuzumab, then tacrolimus monotherapy), lymphoma (small bowel PTLD)
Previous treatment	Induction with rituximab and low dose Cyclophosphamide
Current treatment	Tacrolimus
ACEI / ARB / NSAID	Nil
Presentation	In patient at time of COVID-19 following bowel surgery. Mild illness with fever and chest pain.
Management	No change to tacrolimus dose, antibiotics, supplemental oxygen
Outcome	Short duration of oxygen requirement

Patient 27	
Age / sex	72 year old Female
Vasculitis diagnosis	LVV, AVR for aneurysmal disease
Disease activity	Remission
Other medical history	Nil
Current treatment	MMF
ACEI / ARB / NSAID	Nil
Presentation	3 weeks of fever, cough, sputum, nausea, diarrhoea and malaise Bilateral chest X-ray changes, lymphopenia, CRP 74
Management	Doxycycline, MMF stopped, mild oxygen requirement
Outcome	Discharged after 3 days

Patient 28	
Age / sex	79 year old female
Vasculitis diagnosis	MPO AAV
Disease activity	Remission
Other medical history	IPF (palliative management), MI, hypertension, hypothyroidism, Crohn's, knee replacement, psoriasis, TAH, cholecystectomy
Previous treatment	Cyclophosphamide, high dose steroid
Current treatment	Prednisolone 7.5 mg, azathioprine recently stopped
ACEI / ARB / NSAID	Unknown
Presentation	Unknown
Management	Unknown
Outcome	Died – NB lung disease managed as palliative for some months prior to most recent hospital admission

Patient 31	
Age / sex	55 year old Female
Vasculitis diagnosis	EGPA / overlap connective tissue disease
Disease activity	Moderate
Other medical history	Asthma, COPD, recurrent chest infections
Previous treatment	Cyclophosphamide, hydroxychloroquine
Current treatment	Rituximab, prednisolone 10 mg
ACEI / ARB / NSAID	NSAID
Presentation	Fever, malaise, myalgia, cough, SOB, diarrhoea, high respiratory rate
Management	Invasive ventilation, vasopressors, antibiotics, hydrocortisone
Outcome	Discharged from ICU, remains in-patient

Symptom frequency



For one patient we do not have information regarding symptoms. Dyspnoea was the most common presenting symptom with 24 of 31 patients (77%) presenting with this symptom. Cough and fever were the next most common symptoms both in 17 patients (55%) and 15 patients (48%) respectively.

* Note one individual who experienced haemoptysis and epistaxis was thought to be experiencing a possible flare of vasculitis

Clinical characteristics of vasculitis patients with COVID-19

Critical Outcome*	No	Yes	Total
Total	n = 18	n = 14	n = 32
Demographics			
Age, Mean (SD)	65.9 (12.7)	68.7 (11.8)	67.0 (12.2)
Female, n (%)	8 (44.4)	7 (50.0)	15 (46.9)
Comorbidities, n (%)			
Diabetes	7 (38.9)	3 (21.4)	10 (31.2)
Hypertension	7 (38.9)	7 (50.0)	14 (43.8)
Renal Disease	10 (55.6)	7 (50.0)	17 (53.1)
CV disease	5 (27.8)	7 (50.0)	12 (37.5)
Respiratory disease	1 (5.6)	6 (42.9)	7 (21.9)
Vasculitis diagnosis, n (%)			
GPA (or PR3 AAV)	7 (38.9)	6 (42.9)	13 (40.6)
MPA (or MPO AAV)	5 (27.8)	3 (21.4)	8 (25.0)
Other	6 (33.3)	5 (35.7)	11 (34.4)
Disease activity, n (%)			
remission	11 (61.1)	7 (50.0)	18 (56.2)
minimal	4 (22.2)	2 (14.3)	6 (18.8)
moderate	0 (0)	4 (28.6)	4 (12.5)
severe	3 (16.7)	1 (7.1)	4 (12.5)
Current immunosuppressive therapy, n (%)			
Azathioprine	6 (33.3)	2 (14.3)	8 (25.0)
Corticosteroid (any)	7 (38.9)	11 (78.6)	18 (56.2)
Prednisolone 1 – 5 mg daily **	3 (16.7)	5 (35.7)	8 (25.0)
Prednisolone > 5mg daily**	4 (22.2)	6 (42.9)	10 (31.2)
Cyclophosphamide	2 (11.1)	2 (14.3)	4 (12.5)
Hydroxychloroquine	2 (11.1)	0 (0)	2 (6.2)
IVIG	1 (5.6)	0 (0)	1 (3.1)
Mycophenolate	2 (11.1)	1 (7.1)	3 (9.4)
Rituximab	5 (27.8)	5 (35.7)	10 (31.2)
Other medications, n (%)			
ACE or ARB	8 (44.4)	5 (35.7)	13 (40.6)
NSAID	0 (0)	1 (7.1)	1 (3.1)

* Critical outcome refers to death, need for invasive or non-invasive ventilation or use of high flow oxygen device
** Or other steroid in prednisolone equivalents

Discussion

The update from Case 9 reemphasises the potential for patients to represent with severe disease, even if they have been discharged after an initial admission. The admitting medical team introduced high dose hydrocortisone, presumably to cover for adrenal insufficiency, though the patient had only been on steroids for just over one week. The patient's vasculitis team advised to go back on the previous dose of corticosteroids.

Case 22 represents the potential for an individual with a significant previous burden of immunosuppression and severe cardiovascular disease to improve. This was after a COVID-19 illness requiring non-invasive ventilation – a severe outcome.

Case 23 was an elderly man from an ethnic minority background with additional risk factors including hypertension and ESRD however he experienced a relatively uncomplicated COVID-19 disease course. He remains B cell deplete following previous rituximab and there was no evidence of seroconversion (anti-COVID IgM and IgG) at week 3.

There is limited information for Case 24 as she was admitted at a hospital separate to her vasculitis team. Prior to dying, she received ward based care with high-flow oxygen and there was a local decision not to escalate to ITU. The basis of this decision was not clear. She was young at 46 and her degree of comorbidity was considered to be mild with some lung disease and obesity. It is possible that her 'vasculitis' diagnosis or history of immunosuppression factored into the decision of the treating team.

Case 25 is a complex patient with considerable cumulative immunosuppression following vasculitis induction and renal transplantation with alemtuzumab induction. He was an inpatient at the time of COVID-19 after bowel surgery, which was followed by sepsis, then a period of rehabilitation. His illness was mild, ('almost incidental' given his recent clinical history as per his vasculitis team), requiring only a short duration of oxygen therapy.

Case 27 is our first large vessel vasculitis submission. This individual has an uncomplicated disease course and was discharged after 3 days. Was treated with oxygen and doxycycline, mycophenolate was stopped.

Case 28 had terminal interstitial lung disease and lived for longer than her treating team expected. Due to limited information being available it is not possible to determine whether COVID-19 contributed to her death, but it is suspected that she died 'with' rather than 'because of' the virus. This may be the case for many complicated and frail individuals, including some patients with vasculitis.

Case 31 is a heavily immunosuppressed patient with a history of recurrent chest infections. She required treatment in ICU for multi-organ failure but recovered to the point of ICU discharge.