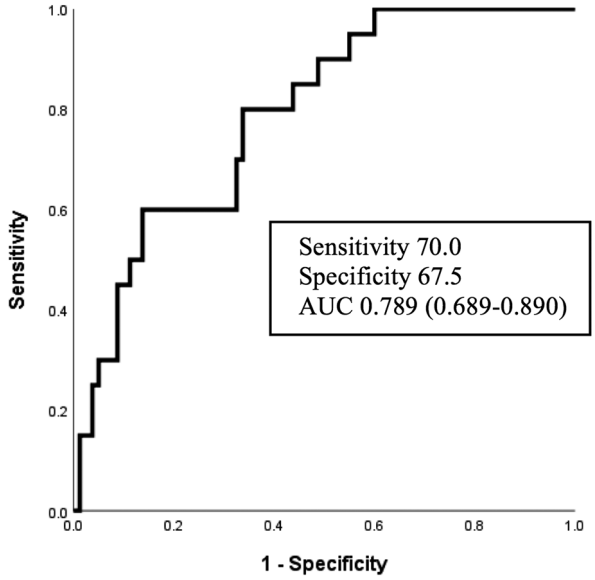


**Supplementary Fig. S1.** Cut-off D-dimer levels for predicting in-hospital adverse outcomes. A cut-off D-dimer level of 0.699 mg/dL was considered for predicting adverse outcomes with a 70.0% sensitivity and 67.5% specificity.

**Supplementary Table S1.** The clinical data of patients experiencing in-hospital mortality.

| Episode | Age/Sex | Diagnosis | Main symptoms | D-dimer (mg/dL) | Time to death (day) | Cause of death/ Precipitating events | Concomitant infection | Organ involvement | Treatment |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 54/Female | GPA | Purpura, dyspnoea | 4.695 | 2 | Alveolar haemorrhage due to vasculitis involvement | No | Skin, Lung, Kidney | High dose steroid |
| 2 | 67/Male | MPA | Fever, syncope | 2.465 | 6 | Macrophage activation syndrome due to vasculitis | No | Kidney, CNS | Steroid pulse |
| 3 | 77/Male | MPA | Purpura | 2.391 | 9 | Respiratory failure due to aggravation of lung involvement | Yes | Skin, Lung, Kidney | High dose steroid |
| 4 | 78/Female | MPA | Fever, dyspnoea | 2.526 | 15 | *C. difficile* infection | Yes | Lung, Kidney | High dose steroid |
| 5 | 82/Female | MPA | Fever | 2.071 | 18 | Aspiration pneumonia | Yes | Kidney, CNS | High dose steroid |
| 6 | 69/Female | GPA | Purpura, altered mental status | 0.702 | 67 | Mental change and shock due to disease aggravation | Yes | Skin, Lung, Kidney, CNS | High dose steroid, Rituximab |
| 7 | 80/Male | MPA | Haemoptysis | 2.153 | 94 | Gastrointestinal bleeding, septic shock | Yes | Lung, Kidney | Plasmapheresis |
| 8 | 68/Male | MPA | Fever, dyspnoea | 3.128 | 140 | Gastrointestinal bleeding | Yes | Lung, Kidney | High dose steroid |
| 9 | 71/Female | GPA | Dyspnoea | 0.549 | 179 | Biliary tract infection, aspiration pneumonia | Yes | Lung, Kidney | Steroid pulse, CYC, AZA |

GPA: granulomatosis with polyangiitis; MPA: microscopic polyangiitis; CNS: central nervous system; CYC: cyclophosphamide; AZA: azathioprine.

**Supplementary Table S2.** The clinical data of patients admitted to the intensive care unit (ICU).

| Episode | Age/Sex | Diagnosis | Main symptoms | D-dimer (mg/dL) | Time to ICU admission (day) | Cause of ICU admission/ Precipitating events | Organ involvement | Treatment |
|---|---|---|---|---|---|---|---|---|
| 1 | 67/Female | MPA | CKD aggravation | 0.380 | 5 | Mental change requiring ventilator | Kidney, Lung, | High dose steroid |
| 2 | 39/Female | EGPA | Eosinophilic myocarditis | 1.721 | 0 | Heart failure | Heart, Nerve | High dose steroid |
| 3 | 72/Female | GPA | Fever, dyspnoea | 2.070 | 0 | Ventilator apply due to aggravation of lung involvement | Kidney, Lung, | High dose steroid |
| 4 | 72/Female | GPA | AKI | 0.422 | 2 | Ventilator apply due to aggravation of lung involvement | Kidney, Lung | High dose steroid |
| 5 | 69/Male | MPA | Fever, dyspnoea | 3.128 | 2 | Ventilator apply due to aggravation of lung involvement | Kidney, Lung | High dose steroid |
| 6 | 67/Male | MPA | Fever, syncope | 2.465 | 43 | Macrophage activation syndrome due to vasculitis | Kidney, CNS | Steroid pulse |
| 7 | 72/Male | MPA | Haemoptysis | 2.153 | 2 | Massive haemoptysis | Kidney, Lung | High dose steroid |
| 8 | 68/Male | EGPA | Abdominal pain | 3.128 | 1 | Shock due to intestinal obstruction | GI, Kidney | High dose steroid |
| 9 | 54/Female | GPA | Purpura, dyspnoea | 4.695 | 1 | Ventilator apply due to alveolar haemorrhage | Skin, Kidney, Lung | High dose steroid |
| 10 | 69/Female | GPA | Purpura, Altered mental status | 0.702 | 1 | Mental change and shock due to disease aggravation | Skin, Lung, Kidney, CNS | High dose steroid, Rituximab |
| 11 | 80/Female | MPA | Dyspnoea | 4.959 | 1 | Ventilator apply due to aggravation of lung involvement | Kidney, Lung, Nerve | High dose steroid, Hemodialysis |
| 12 | 30/Male | GPA | Fever, dyspnoea, purpura | 1.966 | 8 | Ventilator apply due to alveolar haemorrhage | Skin, Kidney, Lung | Steroid pulse, Cyclophosphamide |
| 13 | 52/Male | GPA | Fever, dyspnoea | 0.715 | 0 | Pancytopenia, Shock | Lung | High dose steroid |
| 14 | 31/Male | GPA | Haemoptysis | 1.620 | 0 | Ventilator apply due to alveolar haemorrhage | Lung, ENT | Steroid pulse |
| 15 | 54/Male | GPA | Haemoptysis | 0.300 | 55 | Ventilator apply due to aggravation of lung involvement | Kidney, Lung | Steroid pulse |

GPA: granulomatosis with polyangiitis; MPA: microscopic polyangiitis; CKD: chronic kidney disease; AKI: acute kidney injury; GI: gastrointestinal; ENT: ear, nose, throat.