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Risk factors for cytomegalovirus infection in patients with antineutrophil cytoplasmic antibody-associated vasculitis

--Manuscript Draft--

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Full Title:	Risk factors for cytomegalovirus infection in patients with antineutrophil cytoplasmic antibody-associated vasculitis
Short Title:	Risk factors for CMV infection in AAV patients
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Keywords:	anti-neutrophil cytoplasmic antibody-associated vasculitis; cytomegalovirus; risk factors; Infection
Abstract:	<p>Aims: Cytomegalovirus (CMV) infection under immunosuppression sometimes causes death. This study aimed to elucidate risk factors for CMV infection in patients with antineutrophil cytoplasmic antibody-associated vasculitis (AAV).</p> <p>Methods: Patients with AAV who underwent remission induction treatment at Okayama University Hospital between 2006 and 2016 were retrospectively analyzed. The primary outcome was the development of CMV infection within 3 months.</p> <p>Results: Of the 111 patients, 13 (11.7%) patients developed CMV infection. Patients with CMV infection were older ($p = 0.030$) and had a higher body mass index ($p = 0.029$) in comparison to those without CMV infection. A higher proportion had a severe form ($p = 0.001$) and granulomatosis with polyangiitis (GPA) ($p = 0.001$), as well as a higher Birmingham Vasculitis Activity Score ($p = 0.018$) and C-reactive protein ($p = 0.018$) levels at baseline. Using logistic regression analysis, severe form and GPA were independent risk factors (odds ratio [OR] = 9.68, 95% confidence interval [CI] = 1.92-60.23, and OR = 7.46, 95% CI = 1.46-47.60, respectively). In addition, patients with CMV infection were more likely than those without infection to be glucocorticoid-related diabetes mellitus ($p = 0.025$).</p> <p>Conclusion: Our study highlights disease severity and subgroups of AAV as risk factors for CMV infection.</p>
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Opposed Reviewers:	
Response to Reviewers:	<p>Reviewer: 1</p> <p>1.How many treated patients with AAV were not tested for CMViraemia in the study period? What criteria were used for testing for CMViraemia?</p>