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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:** | 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).<br>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.<br>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).<br>Conclusion: Our study highlights disease severity and subgroups of AAV as risk factors for CMV infection. |
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| **Response to Reviewers:** | Reviewer: 1<br>1.How many treated patients with AAV were not tested for CMViraemia in the study period? What criteria were used for testing for CMViraemia? |