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Keyword 1: Acute respiratory failure **Keyword 2:** Asthma - management **Keyword 3:** Intensive care

Title: A cohort study for improvement of asthma attack by noninvasive positive pressure ventilation (NPPV)

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Body: Objective: A few study of efficacy of NPPV therapy in asthmatic patients have been reported. We studied efficacy and incidence rate of NPPV therapy. Method: This prospective cohort study was performed in two hospitals in Okayama prefecture, Japan. All of the patients admitted because of asthma attack between January 2005 and June 2010. Patients had to fulfill the following criteria before hospitalization. 1. The patients' peak flow is less than 200L/min or 30% of his or her best peak flow 2. Borg scale is nine or ten. Hospitalization patients had to fulfill the following criteria for NPPV therapy. 1. Patients received PaCO₂ >45mmHg and pH<7.351. 2. His or her Borg scale is ten. Results; 94 patients were included in the study. Fourteen patients were received NPPV therapy. All patients avoided receiving mechanical ventilation.

Figure 1 shows profile of pH in the patients receiving NPPV.

Figure 2 shows profile of Borg scale in the patients receiving NPPV. Conclusion; The proportion of patients need NPPV therapy is 15%. In asthmatic patients NPPV therapy appears highly effective in correcting gas exchange abnormalities and severe dyspnea.