

ABSTRACT

Asthma is a disorder that attacks the respiratory tract and causes bronchial hyperactivity to various stimuli characterized by recurrent episodic symptoms such as wheezing, coughing, shortness of breath, and heaviness in the chest. Asthma sufferers will experience exacerbations, namely episodes of asthma recurrence which gradually worsens progressively accompanied by the same symptoms. The length of time a person experiences an exacerbation can be influenced by various factors. To analyze this, the Cox regression model can be used which is within the scope of survival analysis where time is the dependent variable. In the survival analysis, asthma exacerbations were identical/recurrent events where the individual experienced the event more than once during the study. If the survival data contains identical/recurrent events, the analysis uses a counting process approach. Counting Process is an approach used to deal with survival data with identical recurrent events, meaning that recurrences are caused by the same thing, which in this case is the narrowing of the bronchioles in asthmatics. The purpose of this study was to determine the factors that cause asthma exacerbations by using a counting process approach as a data treatment for recurrent events at Diponegoro National Hospital. Based on the results of the analysis, the factors that influence the length of time a patient experiences an exacerbation are the age, gender, and type of cases.

Keywords: Asthma, Survival Analysis, Cox Regression, Recurrent Events, Counting Process