Leroux Spatial Model for Mapping the Relative Risk of Dengue Fever in Makassar

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Abstract

One of the health problems in Makassar city is dengue fever (DF) disease. To find out areas in Makassar that are at high risk of spreading DF, a relative risk analysis can be done. Bayesian Conditional Autoregressive (CAR) is a model used in disease mapping by taking into account the smoothing of the estimated relative risk and using spatial information to obtain a better estimate of relative risk. The Leroux model is a prior used in the CAR model for estimating the relative risk of DF in Makassar city. The relative risk estimation is used for geographic mapping of DF. In this model random and spatial variables are used. The results of this study indicate that DF medium relative risk occurred in some sub-districts of Makassar city. It indicates that the population in these areas susceptible and more likely to be infected with DF disease. This gives a clue so the Health Department of Makassar city can provide more intensive treatment to medium relative risk sub-districts so that the spread of DF disease in Makassar can be overcome.

Key words: Bayesian Autoregressive Conditional, Dengue fever, Leroux, Mapping, relative risk