

International Conference on

# CARDIOLOGY AND CARDIAC NURSING

July 12-13, 2019 | Zurich, Switzerland

## A prediction model of Kawasaki disease

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**K**awasaki disease (KD) is an acute autoimmune systemic vasculitis disease of unknown etiology. At present, diagnosis of KD is strongly relied on non-specific clinical symptoms. Accurate, efficient and objective evaluation of individual's risk of KD is critical for preventing childhood from acquired heart disease. This study was aimed to investigate the independent risk factors and build a model for predicting KD. The patients with KD and other 13 kinds of febrile diseases who were hospitalized in Chongqing Children's Hospital from October 2007 to December 2017 were retrospectively reviewed. The demographic characteristics and laboratory data were collected and then compared between KD group and other febrile diseases group. The independent risk factors were further obtained using multivariate regression analysis. A prediction model was built. Receiver operating characteristic (ROC) curve and the

area under the curve (AUC) were used to evaluate the predictive ability, sensitivity and specificity of the model. A total of 10367 subjects were enrolled in this study, including 5642 cases (54.4%) of KD and 4725 other febrile diseases (45.6%). Multivariate regression analysis showed that the independent risk factors were C-reactive protein(CRP), Percentage of lymphocyte(P-LYM), Percentage of monocytes(P-MON), Platelet count(PLT), Uric acid(UA), Globulin(GLB), Prealbumin(PALB), Lactic dehydrogenase(LDH), Aspartate aminotransferase/Alanine transaminase(AST/ALT) and age. A prediction model was built, with an AUC of 0.90, sensitivity of 83% and specificity of 84%. Our study suggests that using of CRP, P-LYM, P-MON, PLT, UA, GLB, PALB, LDH, AST/ALT and age is accessible to evaluate individual's risk of KD.

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