PADUA PREDICTION SCORE COMBINED WITH SERUM ALBUMIN FOR THE IDENTIFICATION OF VENOUS THROMBOEMBOLISM OF HOSPITALIZED PATIENTS IN THE DEPARTMENT OF RHEUMATOLOGY

O. Peng, L. Long, J. Liu. Sichuan Provincial People’s Hospital, Zunyi Medical University, Department of Rheumatology, Chengdu, China

Background: Venous thromboembolism (VTE) includes thrombotic disease of venous system, but primarily includes lower extremity deep vein thrombosis (DVT) and pulmonary embolism (PE). Population-based epidemiological studies have shown an association between systemic autoimmune diseases and VTE[1]. The Padua prediction score (PPS) is a new 20-point risk assessment model proposed by Professor Barbar et al[2] in 2010. A large number of researches have shown that low serum albumin concentration is associated with an increased risk of VTE [3], but there is a lack of studies on serum albumin in VTE, and there are no reports on PPS in rheumatology inpatients.

Objectives: To investigate the status of VTE in patients in the department of rheumatology, and to explore the value of serum combined with albumin in the identification of VTE in this patient population.

Methods: Baseline data of inpatients in rheumatology department were collected at Sichuan Provincial People’s Hospital from September 2018 to September 2020. Occurrence of VTE was compared between high and low risk groups. PPSs were analyzed in VTE and non-VTE patients. Multivariate logistic regression was used to analyze the independent risk factors of VTE. The receiver operating characteristic curve was used to evaluate the probability of rheumatic inpatients with VTE assessed by PPS, serum albumin and the combined predictive model.

Results: A total of 2282 patients were included in this study, and 50(2.2%) had symptomatic VTE. Among the symptomatic VTE cases, 38(1.6%) had DVT only, 8(0.4%) had PE only, and 4(0.2%) were diagnosed with DVT and PE. PPSs in VTE and non-VTE groups were 3.00(2.00–6.00) and 2.00(1.00–2.00) respectively (P< 0.05). One hundred and eighty-eight cases was divided into high-risk group of VTE (PPS≥4), while 2094 cases (PPS<4) were in the low-risk group. Logistic regression analysis showed that known thrombophilic condition, history of VTE, reduced mobility, and D-dimer were independent risk factors of VTE in rheumatology patients, the odd ratio (OR) values were 161.90, 26.08, 8.73, and 1.04. Serum albumin was the independent protection factor [OR= 0.92(95%CI:0.87–0.98)]. The AUC of PPS model, serum albumin model and the combined predictive model were 0.77, 0.75, 0.84, respectively. The difference between the combined prediction model and PPS model was statistically significant (Z=3.813, P<0.05). The optimal sensitivity of PPS and serum albumin models is 60%, 82%, respectively, and the optimal specificity of is 82.5%, 58.6%, respectively. The combination model corresponds to a sensitivity of 62% and a specificity of 90.4%.

Conclusion: The incidence of symptomatic VTE was relatively higher in hospitalized patients in rheumatology department. Serum albumin was the protective factor. The combination of albumin and PPS can improve the accuracy of screening for VTE in rheumatology in-patients.

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REFERENCES: