

## **To analyze the incidence and its risk factors of peripherally inserted central venous catheter related upper extremity deep venous thrombosis (PICC-UEDVT) in intensive care unit (ICU)” Zhao et al (2017).**

Abstract:

**OBJECTIVE:** To analyze the incidence and its risk factors of peripherally inserted central venous catheter related upper extremity deep venous thrombosis (PICC-UEDVT) in intensive care unit (ICU).

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**METHODS:** Clinical data of the patients received PICCs in ICU of the First Affiliated Hospital of Nanchang University from August 2013 to August 2016 were retrospectively analysed. The inclusion criteria in the study included: the age > 18 years old, catheter indwelling time > 1 week and the complete relevant information. The gender, age, history of deep venous thrombosis (DVT) and PICC; number of illness involved organs; complicated with hypertension, diabetes, infection or not; and acute physiology and chronic health evaluation II (APACHE II), duration of mechanical ventilation; D-dimer, platelet count (PLT), and activated partial thromboplastin time (APTT) were recorded. According to the occurrence of PICC-UEDVT, univariate analysis was performed to identify the risk factors of PICC-UEDVT and variables with statistical difference were selected to do multivariate binary logistic regression analysis for the confirmable independence risk factors.

**RESULTS:** Six patients of the 61 cases occurred PICC-UEDVT with the occurrence rate of 9.8%. Time of occurrence was 9 days, 14 days (2 cases), 22 days, 28 days, 62 days after inserted catheter respectively. Univariate analysis demonstrated that previous DVT, D-dimer and big diameter PICC were risk factors associated with PICC-UEDVT . It was shown by multivariate logistic regression analysis that the previous DVT and increasing size of catheter (OR = 18.070, 95%CI = 1.317-247.875, P = 0.030) were independent risk factors associated with the development of PICC-UEDVT.

CONCLUSIONS: For critical patients with a history of DVT and D-dimer > 5 mg/L, especially for those with the catheter placement over 14 days in ICU, clinical staffs should remain on high alert for the development of PICC-UEDVT and take early effective measures to prevent it. Meanwhile the patient's vascular conditions should be precisely assessed using ultrasound before insertion, and the appropriate catheter size be selected to reduce the incidence of PICC-UEDVT. Color Doppler ultrasonography should be used for dynamic monitoring during the indwelling of PICC, so that PICC-UEDVT can be found as early as possible.

Reference:

Zhao, N., Zhang, J., Jiang, T., Chen, X., Wang, J., Ding, C., Liu, F., Qian, K. and Jiang, R. (2017) Risk factors of deep venous thrombosis associated with peripherally inserted central venous catheter in upper extremity in ICU. *Zhonghua Wei Zhong Bing ji Jiu yi Xue.* 29(2), p.167-171. .

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