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The Association between Lower Extremity Deep Vein Thrombosis and Peripherally Inserted Central Catheters.

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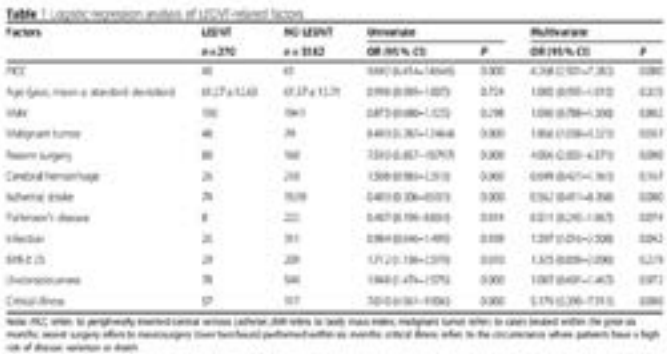
Statement of the Problem: Peripherally inserted central venous catheter (PICC)-related venous thrombosis is mainly mural thrombus and limited to the venous route where the catheter is located. Increasing evidence has suggested that PICC-related venous thrombosis can even exceed the range of infusion route. However, there is no explanation for this clinical phenomenon. The purpose of this study is to elucidate the association between peripherally inserted central venous catheter (PICC) in upper extremities and lower extremity deep venous thrombosis (LEDVT) by observing the changes in D-dimer. This was a retrospective cohort study with 3452 patients (104 inserted with PICCs and 3348 without PICC) enrolled at the neurology department from April 1, 2017 to April 1, 2020. The patients underwent color Doppler ultrasound (CDU) and D-dimer examinations. LEDVT-related factors and D-dimer value were analyzed before and after PICC insertion. The predictive value of D-dimer for LEDVT was also evaluated.

Results: Univariate logistic regression analysis showed that PICC insertion increased the risk of LEDVT by 9 times and promoted the increase of D-dimer by 5 times. After risk adjustment, multivariate logistic regression analysis showed that PICC insertion increased the risk of LEDVT by 4 times and tripled the risk of D-dimer increase. The concentration of D-dimer was significantly increased after PICC insertion. D-dimer was unsuitable for excluding venous thrombosis in patients inserted with PICCs.

Conclusions: PICC insertion increases the level of D-dimer and the risk of LEDVT. The risks of venous thrombosis need to be assessed in patients inserted with PICCs to ensure the expected clinical outcomes.



Biography

Dr. Liu Wanli has professional knowledge in nursing and pharmacy, and has been committed to the construction of safe infusion system. She is an important member of the intravenous therapy group on both sides of the Taiwan Strait and has won many awards related to intravenous therapy in China. In the prevention and treatment of complications related to infusion tools, Dr. Liu is good at transforming clinical problems into scientific research topics, and combining basic experiments with clinical trials to ensure the infusion safety of patients.

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