

**Reference:**

Peripherally inserted central venous catheter (PICC) is the main venous access for cancer patients when they receive chemotherapy and nutritional support, but PICC-related venous thrombosis has become one of the most common and serious complications. It is very important to further explore the relationship among these features, so that prevent and treat the PICC-related thrombosis. To investigate the clinical features and the related factors of PICC-related upper extremity asymptomatic venous thrombosis in cancer patients, and to provide theoretical basis for the prevention of venous thrombosis. A total of 127 tumor patients with PICC catheterization were selected. Thrombus was detected by color Doppler ultrasound at different times: before catheterization and 24 hours after catheterization, and every week. The study was terminated at the time of thrombosis, and patients who did not develop thrombus were terminated after 6 weeks of follow-up. The clinical characteristics and influencing factors of asymptomatic thrombosis such as vessel diameter, blood flow velocity, thrombosis time, location, and the thrombosis stages were recorded. The incidence of PICC-related upper limbs asymptomatic thrombosis was 48.82% (62/127), and the median time was 3 days. The incidence within 24-hour was 37.1% and within 1 week was 85.49%. A total of 81 venous thrombosis were found in 62 patients with asymptomatic thrombosis, there were 19 (23.5%) venous thrombosis in the deep veins while 62 (76.5%) in the superficial veins. Furthermore, thrombosis stages can be divided into 3 levels: stage I accounted for 51.85% (42/81), stage II accounted for 37.04% (30/81), and stage III accounted for 11.11% (9/81). The group trajectory analysis indicated the 3 changes of blood flow velocity during the follow-up period: downward trend, upward trend, and steady fluctuations. Survival analysis indicated that the cohort with downward trend have the high risk of thrombosis (67.90% vs 19.00% vs 45.10%). Cox proportional hazards model suggested that the patient's Eastern Cooperative Oncology Group score (hazard ratio 2.791, 95% confidence interval 0.08-0.76) and blood flow velocity (HR 0.250, 95% CI 2.01-3.87) was the risk of PICC-related asymptomatic thrombosis. PICC catheterization can affect blood flow and asymptomatic thrombosis can occur at an early stage. Patient's upper limb activities should be guided to promoting blood circulation, thus effectively preventing thrombosis. Asymptomatic thrombosis can also be detected by color Doppler ultrasound system, within a recommended time of 1 week after catheterization.

**Reference:**

Wang, G., Li, Y., Wu, C., Guo, L., Hao, L., Liao, H., Xiao, X., Liu, S. and Luo, L. (2020) The clinical features and related factors of PICC-related upper extremity asymptomatic venous thrombosis in cancer patients: A prospective study. *Medicine*. 99(12), p.e19409. doi: 10.1097/MD.00000000000019409.