

Evaluation of Success Rate and Complication after Catheter Directed Thrombolysis in Acute Deep Vein Thrombosis of Iliofemoral Vein

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Abstract

Introduction: Considering the different treatment methods and their controversial efficacy and the importance of proper treatment with decreasing complications and costs for patients with acute Iliofemoral DVT, this study aimed to assess the success rate and complications of catheter-directed thrombolysis in patients with acute Iliofemoral DVT, referred to Razi Hospital in Rasht, 2017-2018.

Objective: To evaluate the Success Rate and Complication after Catheter Directed Thrombolysis in Acute Deep Vein Thrombosis of Iliofemoral Vein

Materials and Methods: This case-series study was performed on the patients with acute Iliofemoral DVT underwent catheter-directed thrombolysis referred to Razi Hospital in Rasht, 2017-2018. All patients diagnosed with acute Iliofemoral DVT on the basis of color Doppler ultrasonography and venography were candidates for treatment. Patients with concomitant illnesses, such as diabetes mellitus, hypertension, underlying conditions such as malignancy and any other illnesses other than DVT, were excluded. The variables studied in this study were collected using a questionnaire.

Results: In this study, 20 patients with acute Iliofemoral DVT younger than 60-year-old with the onset of symptoms less than 2 weeks were studied. The mean age of the subjects was 39.15±12.07 years, 11 (55%) cases were male and the rest were female. 13 cases were affected by acute left Iliofemoral DVT. AS for initial symptoms, the highest frequency (65%) was related to pain, swelling, and tenderness. The results of the study showed that there was a 100% success rate, and none of the patients in the follow-up period of 6 months showed restenosis.

Conclusion: Based on this study and comparison to other authors' recommendations, it seems that the success rate in catheter-directed thrombolysis in patients with acute Iliofemoral DVT was 100%. There were no complications in 75% of the patients. The most reported complication was pain and there was no statistically significant relationship between the complications of the patients during the treatment, the duration of admission and age and sex.

Conflict of interest: non declared

Key words: Catheterization\ Plethysmography, Impedance\ Thrombosis\ Ultrasonography, Doppler, Color\ Venous Thrombosis

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Extended Abstract

Introduction: Deep Venous Thrombosis (DVT) is a common disease that results from the formation and development of multiple clots inside the deep veins of the lower extremities (1,2). Treatment of deep vein thrombosis remains a challenge. In general, treatment of iliofemoral DVT, in addition to traditional anti-coagulant methods, nowadays involves many measures that remove the acute clot from the deep veins. Studies have shown that the use of anticoagulant therapy alone does not completely resolve clots, and leads to chronic venous dysfunction in patients with DVT. Systemic thrombolytic drugs have also been banned because of the high risk of bleeding and inadequate blood clotting, so CDT (Catheter-Directed Thrombolysis) was developed to resolve thrombosis in patients with DVT (5-8).

Objective: This study aimed to assess the success rate and complications of catheter-directed thrombolysis in patients with acute Iliofemoral Deep Venous Thrombosis, referred to Razi Educational Remedial Research Center as the only governmental Vascular and Endovascular Surgery center in Guilan Province, Rasht, North of Iran in 2017-2018.

Materials and Methods: This case-series study was performed on patients with acute Iliofemoral DVT, who underwent catheter-directed thrombolysis and referred to Razi Hospital in Rasht, 2017-2018. All patients diagnosed with acute Iliofemoral DVT on the basis of color Doppler ultrasonography and venography were candidates for treatment. Patients with concomitant illnesses, such as diabetes mellitus, hypertension, underlying conditions such as malignancy and any illness other than DVT, were excluded. For all patients, abdominal, hip and chest CT scans were done to determine the extent of pelvic thrombosis, the presence of intravenous IVC or asymptomatic pulmonary embolism as well as to rule out intracranial lesions that may result in bleeding with thrombolysis and anti-coagulants. To perform the CDT, the affected popliteal vein was catheterized with ultrasound in prone position, and after crossing the hydrophilic guidewire into the IVC (Inferior Vena Cava), a side-hole infusion catheter (Macnamara from ev3 company) was inserted into the femoral vein near the IVC. After intravenous hydrocortisone injection, 200,000 units of streptokinase were injected into the catheter for 20 minutes, then, 100,000 units per hour through a

catheter, followed by injection of heparin 500 units per hour for 24 to 72 hours, followed by daily venography. After confirmation of venous thrombosis, patients underwent CDT and were discharged with Rivaroxaban 15 mg every 12 hours and one week later, they were referred to the vascular surgery clinic for follow-up. The success rate of this treatment was defined as openness greater than 50% of the venous lumen and the presence of prograde blood flow. Patients were followed up for one week, two weeks after discharge, and then monthly for up to 6 months. Ultrasound was performed by a specialist to monitor valve function and venous flow. The variables studied in this study were collected using a questionnaire. All data were entered into SPSS18 software.

Results: In this study, 20 patients with acute Iliofemoral DVT, younger than 60-year-old with the onset of symptomless than 2 weeks were studied. The mean age of the subjects was 39.15 ± 12.07 years, 11 (55%) cases were male and the rest were women. The mean duration of treatment was 14.36 ± 62.40 hours with a median of 72 hours; the lowest was 48 hours and the maximum was 96 hours. The mean hospital stay was 3.70 ± 0.57 with a median of 4 days; the minimum duration was 3 days and the maximum was 5 days. In 15 patients (75%) no complications were observed during the treatment and hospital stay. The most common complication was pain, as observed in 3 individuals. In 9 patients with left DVT and 2 patients with right DVT after thrombolysis, evidence of chronic stenosis in the iliac veins was observed in controlled venography (May-Thurner syndrome). 13 cases were affected by acute left Iliofemoral DVT. As for initial symptoms, the highest frequency (65%) was related to pain, swelling, and tenderness. The results of the study showed that there was a 100% success rate, and none of the patients in the follow-up period of 6 months exhibited restenosis.

Conclusion: According to the results of this study and comparison to other authors' recommendations, it seems that the success rates in catheter-directed thrombolysis in patients with acute Iliofemoral DVT were 100%. There were no complications in 75% of the patients. The most reported complication was

pain, with no statistically significant relationship between the complications of the patients during the treatment and length of hospital stay with age and sex. In many centers, there is no other drug available except streptokinase because of the lack of newer

thrombolysis drugs or economic problems. This study showed that this drug can still be used as an effective agent for thrombolysis of iliofemoral DVTs without significant complications.

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