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D-DIMER CORRELATION WITH TREATMENT RESPONSE IN CHILDREN WITH VENOUS MALFORMATIONS

YCL Leung[2], SD Yam[1], JWS Hung[1], CSW Liu[2], LY Chung[1], MY Tang[1], NSY Chao[2], WY Leung[1], KKW Liu[2]
[1]Queen Elizabeth Hospital, Hong Kong, Hong Kong, [2]United Christian Hospital, Hong Kong, Hong Kong

Aim of the Study: Raised D-dimer levels may be evident in patients with venous malformation (VM) due to localized intravascular coagulopathy. Few studies have looked into changes in D-dimer after sclerotherapy and its correlation with treatment outcome and complication. Our study aims to investigate changes in perioperative D-dimer after alcohol sclerotherapy.

Methods: From 2014 to 2016, patients under 18 years old with venous malformations undergoing alcohol sclerotherapy were recruited. Patient demographics and lesion characteristics were recorded. Pre-hydration and intravenous 20% mannitol were given before intervention. Perioperative D-dimer levels were collected 2 weeks prior to treatment (baseline), and on postoperative days 1, 2, 5, and 14 respectively. A raised D-dimer level was defined as an at least 50% increase compared with the baseline level. Patients were followed up with documentation of satisfaction (significant size reduction without need for further treatment) at 6 months and long-term recurrence (beyond 6 months of treatment).

Main results: Eighteen patients were identified (10 females, 8 males) with a median follow up of 21 months. Overall, 15 patients (83%) had a satisfactory outcome. Baseline D-dimer levels were high (>500ng/mL) in 8 patients (44%). Postoperative D-dimer level was raised in 12 patients irrespective of their baseline levels, with 92% peaking on post-operative day one (n=11). In the elevated D-dimer group, 11 patients had a satisfactory outcome and 10 patients did not have long-term recurrence. We did not encounter any bleeding or thromboembolic complications.

Conclusion: Alcohol sclerotherapy is an effective treatment for VM in children. Abnormal D-dimer levels are common in VM patients and increase in two-third of cases undergoing sclerotherapy. Perioperative D-dimer levels may predict early treatment response and long-term outcome. Adequate pre-hydration and intravenous mannitol administration may prevent potential thromboembolic complications of sclerotherapy.