Thrombosis Incidence in Major Paediatric Burns

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BACKGROUND

Major burns are associated with multiple risk factors for thrombotic events such as decreased mobilisation, prolonged use of central venous lines and systemic inflammation. However, it is unclear if these may be offset by the inherent lower risk of thrombotic events in the paediatric patient.

Thromboprophylaxis is now recommended in adult burns patients with a recognised deep vein thrombosis (DVT) incidence of 0.8%1. However, there is a lack of data and therefore guidance relating to the paediatric population. Large studies in this cohort are difficult to obtain with very little published on the topic. The only relevant studies were not specific to burns; however did confirm the lack of data available2,3.

This study seeks to examine the incidence of thromboembolic events and their risk factors in major paediatric burns with a view to support a hypothesis for thromboembolic prevention strategies.

METHOD

• A retrospective audit of all major paediatric burns, defined as % Total Body Surface Area (%TBSA) ≥30%, at the WCH between 1st January 2000 and 31st December 2016.
• Coding data and the local burns database were used to identify participants with subsequent review of case files and online records.
• Exclusion criteria: Superficial burns only
• Hospital admission ≤1 day

RESULTS

Of the cohort (n=23), 6 cases (26%) were complicated by major thrombotic events. Notably these patients had the most extensive burns averaging 68.5% TBSA.

Thromboprophylaxis was not used. Thrombolysis required longer periods of intubation, hospital admission, PICU admission, operations, and blood transfusions. These data points were more than doubled the cohort that were diagnosed with a thrombus.

All thrombotic events were significant, involving deep vessels and required enoxaparin therapy for 3 to 6 months. Of the events, 4 were secondary to Central Venous Catheters (CVC) located in either the internal jugular or femoral vein, 1 was secondary to a Peripherally Inserted Central Catheter (PICC) and 1 was diagnosed clinically as a DVT to the left calf.

DISCUSSION

The incidence of thromboembolic events in our study was significant albeit in a small population. There is a strong association between large %TBSA and thrombus with clots mostly forming in central venous catheters.

Whilst further research is required, this study demonstrates targeted thromboprophylaxis may be required for major paediatric burns, especially in the setting of CVC requirement.

CONCLUSIONS

The incidence of thromboembolic events in our study was significant albeit in a small population. There is a strong association between large %TBSA and thrombus with clots mostly forming in central venous catheters.

Wireless data suggests an increased risk of thrombotic events in the paediatric burns population, which may be related to large %TBSA and the associated incidence of interventions. It is not clear how these factors individually relate to the risk of thrombosis.

REFERENCES


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