

Venous thromboembolism in burn patients: retrospective analysis of all admissions to Middlemore Hospital, Auckland.

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Introduction

- Burn patients have a theoretical **increased risk** of venous thromboembolism (VTE) due to derangements in one or more aspects of **Virchow's triad**.
- This can be a direct consequence of the burn **injury** or an indirect consequence of their **management**.
- The morbidity and mortality associated with VTE is substantial.

Aims

- To identify the **incidence** of VTE in burn patients admitted to Middlemore Hospital
- To identify factors which **predict** an increased risk

Patients

- Age > 15 years
- Acute burn diagnosis between 1st July 2006 and 30th June 2013
- Admitted (>24h) under one of the burn or plastic surgery teams, including ICU.

Methods

Data was gathered using the electronic patient record database for all patients (n=992) and full clinical notes for the VTE population (n=9).

Outcome measured:

Occurrence of venous thrombosis or pulmonary embolism during, or up to 90 days after, the specified admission.

Putative risk factors analysed:

- Age
- Sex
- Ethnicity
- Total Body Surface Area (%)
- Length of Hospital Stay
- Burn thickness

Descriptive statistics were generated and regression analysis (simple and multiple) performed.

Results

- **0.9%** (95% C.I 0.5-1.7%) of patients (9/992) had a venous thromboembolic event.

Factor	Odds Ratio (95% CI)	Significance
Age	1.00 (0.96, 1.04)	<i>P</i> =0.91
Sex	0.27 (0.03, 2.15)	<i>P</i> =0.21
Ethnicity	0.33 (0.07, 1.60)	<i>P</i> =0.17
TBSA	1.58 (1.25, 2.00)	<i>P</i>=0.0001
Burn thickness	1.52 (1.17, 2.00)	<i>P</i>=0.002
Length of hospital stay	2.05 (1.29, 3.25)	<i>P</i>=0.003

- **Length of Hospital Stay** was the only factor which *independently* predicted risk of VTE.

Conclusion

Our study found a *symptomatic* VTE incidence of 0.9% which could be predicted by length of hospital stay. A prospective study would allow assessment of the *true* incidence, independent of symptomatic presentation, although the clinical relevance of asymptomatic cases is still uncertain.

