Australasian Journal of Dermatology

Australasian Journal of Dermatology (2016) 57, 205–209 doi: 10.1111/ajd.12318

ORIGINAL RESEARCH

A 13-year retrospective study evaluating the efficacy of using air-fluidised beds for toxic epidermal necrolysis patients

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ABSTRACT

Objectives: Toxic epidermal necrolysis (TEN) is a potentially life-threatening dermatological disease involving large areas of skin loss with systemic symptoms. This study evaluated the efficacy of air-fluidised bed therapy for TEN patients.

Methods: Of 27 people with TEN, 11 used air-fluidised beds (the air-fluidised group) and 16 used standard beds (the control group). Days to complete re-epithelialisation, re-epithelialisation rate, incidence of complications, mortality, pain measured by visual analogue score and the incidence of cutaneous infection were compared in these groups.

Results: The mean body surface area of involvement was 77.0 ± 11.8% and baseline mean severity-of-illness score for TEN (SCORTEN) was 2.81 ± 1.08. The re-epithelialisation rate in the air-fluidised group was 100% but was only 56.3% in the control group ($P < 0.05$). There was a significant difference in the time taken to complete re-epithelialisation between the air-fluidised group (13 days [95% CI: 9.0–17.0]) and the control group (21 days [16.5–25.5], $P < 0.05$). Furthermore, the incidence of complications was 18% in the air-fluidised group versus 75% in the control group, including fewer cutaneous infections ($P < 0.05$). There was a significant reduction in pain among the air-fluidised group compared with the control group ($P < 0.05$). There were no deaths in the air-fluidised group while 19% of the control group died.

Conclusion: Air-fluidised beds can reduce the time to complete re-epithelialisation, relieve pain and increase the re-epithelialisation rate of TEN patients, but there was no significant difference between them in mortality rate in our study.

Key words: SCORTEN, survival, treatment.

INTRODUCTION

Toxic epidermal necrolysis (TEN), which is similar to second-degree burn, can be a fatal disease that involves large areas of epidermal loss.[1] Although TEN is a rare disease with an incidence of 1.9 cases per million individuals per year[2–4] its reported mortality ranges from 25 to 40%,[5,6] and can be even higher in elderly patients and in those with a large surface area of epidermal loss.[7] Death results principally from sepsis and metabolic disturbances. Mortality from TEN can be predicted at the time of hospital admission by the severity-of-illness score for TEN (SCORTEN).[4]

Wound management plays a very important role in minimising secondary infection. Although there is no gold standard approach to wound care many centres now use a traditional burn care approach. Increasingly, skin substitutes, such as porcine xenografts and human allografts (Biobrane [Bertek Pharmaceuticals, Morgantown, WV, USA] and Surprathel [Polymedics Innovations, Denkendorf, Germany]), are being used as wound care treatments in TEN, but proof of their efficacy still lacks the support of a large multicentre study.[8–10]

Abbreviations:

SCORTEN	severity-of-illness score for toxic epidermal necrolysis
TEN	toxic epidermal necrolysis
VAS	visual analogue score

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Conflict of interest: none

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Submitted 1 April 2014; accepted 16 January 2015.