

Prognosis for survival in burns victims rescued from dilute pyroclastic density currents at Merapi volcano, Indonesia

Peter J Baxter¹, Ken W Dunn², Susanna Jenkins³, Jean-Christophe Komorowski⁴, Barry Voight⁵

¹University of Cambridge, UK, ²Manchester Burn Service, UK, ³University of Bristol, UK, ⁴Institut de Physique du Globe, France, ⁵Penn State University, USA

E-mail: pjb21@medschl.cam.ac.uk

Clinical details of 106 burns victims who survived to reach hospital in three lethal eruptions of Merapi on 22 November 1994, 26 October and 5 November 2010 were available for analysis of the probability of surviving their injuries using age, sex and burn extent (% total body surface area) as prognostic indicators. In the 1994 eruption, 63 reached the Dr Sardjito Hospital, Yogyakarta, of whom 19 survived to leave hospital. In 2010, 43 were hospitalized with only 4 survivors in the 26 October event and 18 survivors on 5 November; all were treated in the Sardjito Hospital. The maximum PDC temperatures at the three eruptive events which occurred on the south flank of Merapi were in the same range (200-300°C) and the distance (time) to hospital was similar. The 106 victims were matched with burns victims in the UK national burns database. The most accurate matches of the patients were with grouped data in the revised Baux Index, the Abbreviated Burn Severity Index, and the Belgian Outcomes Burn Index. These results suggest a more favourable prognosis of severe burns in PDC victims than expected.