

Microbiological Trends in Patients with Burns: An 8-year Perspective

Chengde Pham¹, Daniel Foley¹, Heather Cleland¹, Allen Cheng^{2,3}, Alex Padiglione², Anton Y. Peleg^{2,4}

¹ Victorian Adult Burn Service, Alfred Hospital, 55 Commercial Road, Melbourne, Victoria 3004, Australia, cdpham@gmail.com, d.foley@alfred.org.au, h.cleland@alfred.org.au

² Department of Infectious Disease, Alfred Hospital and Monash University, 55 Commercial Road, Melbourne, Victoria 3004, Australia, alexpadiglione@hotmail.com

³ Department of Epidemiology and Preventative Medicine, School of Public Health and Preventative Medicine, Monash University, Alfred Hospital, Commercial Road, Melbourne, Victoria 3004, Australia, allen.cheng@monash.edu

⁴ Department of Microbiology, School of Biomedical Sciences, Monash University, Building 76, Wellington Road, Clayton, Victoria 3800, Australia, anton.peleg@monash.edu

Bacterial infections cause significant morbidity and mortality in patients with burns. Up-to-date knowledge of microbiological trends is critical to making accurate clinical decisions. Whilst there are studies describing the prevalence of common microbes colonising burns patients, these results are within cross-sectional time periods and differ significantly between geographical locations. The aim of this study was to identify evolving trends in bacterial colonisation and antimicrobial susceptibilities in patients with burns.

We performed a retrospective cohort analysis of microbiological results and antibiotic susceptibilities at an Australian Burns Centre from January 2002 to December 2009. Four 2-year time periods were defined from the 8-year study period.

A total of 1129 isolates from 463 patients were included. From 2002-2003, Gram positive bacteria predominated (53.6%). However, from 2004 onwards Gram negative bacteria were more prevalent (54.3% in 2004-2005, 49.4% in 2006-2007, 50.9% in 2008-2009). Overall, *Staphylococcus aureus* (n=333, 29.4%) and *Pseudomonas spp.* (n=127, 11.2%) were the predominant organisms isolated. Trends towards increasing *Enterococcus faecalis* (2.3% in 2002-2003 to 4.3% in 2008-2009), *Enterobacter cloacae* (1.5% to 4.3%) and *Escherichia Coli* (6.1% to 7.3%) were identified. Of the *S. aureus* isolates, 20.1% (n=67) were methicillin-resistant (MRSA) but all were susceptible to Vancomycin.

There is a paucity of available literature on the temporal trends in microbiology from patients with burns. Our results suggest that Gram negative bacteria other than *Pseudomonas* are increasing in prevalence.

This study highlights the importance of understanding the microbial epidemiology of patients with burns to assist with the most appropriate empiric and targeted therapy.

Key Words

Burns, Microbiology, Epidemiology, Infection, Bacteria, Resistance

Nominated Stream for Oral Presentations

- Medical
- Nursing
- Allied Health
- Scientific

Nominated Stream for Poster Presentations

- Care
- Prevention
- Research

General instructions for preparing your abstract:

- Save this file to your desktop
- Please only capitalise the first word and pronouns in your abstract title
- Make sure you include all the authors and their organisation details in the abstract
- Highlight the presenting author by make his/her name bold
- Your abstract will appear on the web site and in the program book exactly as submitted