

SWAN

2018

TRAUMA, CRITICAL CARE
& EMERGENCY SURGERY
CONFERENCE

27th & 28th July 2018

Sheraton on the Park
Sydney, Australia

SWAN2018 SCIENTIFIC PROGRAM

Friday 27th July 2018

A PREDICTION MODEL FOR FASCIAL CLOSURE IN THE OPEN ABDOMEN

Adam Cristaudo

DR ADAM CRISTAUDO. MBBS, MS (Surgical Outcomes), PhD Candidate
Accredited RACS SET Trainee, Trauma Department, Liverpool Hospital, NSW,
2170, Australia

Principal Investigator, Westmead Research Centre for Evaluation of Surgical
Outcomes, Department of Surgery,
The University of Sydney, Westmead Hospital, Westmead, NSW, 2145, Australia
A/PROF. KERRY HITOS. BSc, MMS, PhD

Director, Westmead Research Centre for Evaluation of Surgical Outcomes,
Department of Surgery, The University of Sydney, Westmead Hospital,
Westmead NSW, 2145, Australia

A/PROF. RONNY GUNNARSSON. MD, PhD

Former Associate Professor in General Practice and Rural Medicine, Cairns
Clinical School, College of Medicine and Dentistry, James Cook University, QLD,
4870, Australia

A/PROF. ALAN DECOSTA. FRCS (I), FRACS

Associate Professor of Surgery, James Cook University, Cairns Clinical School,
College of Medicine and Dentistry, James Cook University, QLD, 4870, Australia

Objective/Introduction

The use of the open abdomen (OA) technique is an important approach for
managing intra-abdominal catastrophes. However, delays in definitive fascial
closure (DFC) are associated with a high incidence of complications and poor
outcomes. The aim of this study is to develop a multivariate prediction model
for DFC in patients being managed with an OA.

Methods

A multicentre observational study was performed involving all patients managed
with an OA admitted to Cairns, Townsville and Royal Brisbane &
Women's Hospitals from 2000 to 2016. Prognostic factors were based on a recent
systematic review.

Statistical analysis was performed using multivariate logistic regression with 28
prognostic factors for DFC.

Results

In total, 312 patients were managed with an OA. DFC occurred in 219 patients
(70%).

Median DFC time was 2 days (interquartile range: 3 days). Significant prognostic
factors included Acute Physiology and Chronic Health Evaluation III score (odds
ratio (OR): 0.97; 95% confidence interval (CI): 0.96, 0.98), respiratory failure (OR:
0.38; 95% CI: 0.16, 0.82), peritoneal contamination (OR: 0.22; 95% CI: 0.05,
0.98), total procedures (OR: 0.71; 95% CI: 0.63, 0.81) and year (OR: 1.1; 95%
CI: 1.0, 1.2). A multivariate prediction model was developed to demonstrate a
patient's likelihood of DFC (receiver operator curve area under curve = 0.88, 95%
CI: 0.83, 0.92)

Conclusion

Predictor variables were identified using clinical knowledge and statistical
reasoning to develop a multivariate prediction model for DFC in patients being

managed with an OA. External validation of this model will allow for this to be readily used in clinical practice.

References

1. Cristaudo A, Jennings S, Hitos K, Gunnarsson R, DeCosta A. Treatments and other Prognostic Factors in the Management of the Open Abdomen: A Systematic Review. J Trauma Acute Care Surg, February 2017, 82(2): 407-418 DOI: <http://dx.doi.org/10.1097/TA.0000000000001314>