

ACTA Project Grant

2009 Round 1

Successful Applicant

Dr Ben Shelley

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Title of Project

Endogenous Antioxidant Capacity and Oxidative Stress after Thoracic Surgery

Amount

£5233

Abstract

Acute lung injury (ALI) and the more severe acute respiratory distress syndrome (ARDS) occurs in response to a wide variety of insults and are common clinical syndromes of acute respiratory failure in the critically ill person. ALI/ARDS complicates 5-10% of subjects undergoing thoracic surgery for lung resection and has a mortality exceeding 50% in this group of patients. In response to inflammatory stimuli reactive oxygen and reactive nitrogen species are generated within the lung which in toxic levels can cause molecular and cellular damage. The role of such 'oxidative stress' stress has been well established in the pathophysiology of ALI/ARDS after lung resection. We hypothesise that patients presenting for thoracic surgery have dysfunctional antioxidant mechanisms. Furthermore we suggest that such dysfunction places them at increased risk of oxidative stress and lung injury following surgery. In this prospective observational pilot study we seek to evaluate any association between Total Antioxidant Capacity and oxidative stress as measured by lipid peroxidation in this group of patients.