

Critical Care Management And Its Significance

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Critical Care Management is the corner stone of the management of patients with multi-trauma. Multidisciplinary care has been targeted towards managing the combination of tissue loss and haemorrhage, which sometimes leads to the development of the clinical syndrome of Systemic Inflammatory Response Syndrome (SIRS). The combination of orthopaedic and other injuries seems to be associated with higher transfusion requirements and more significant changes to the body's physiological balance. Whilst we treat the blood loss well, it is becoming increasingly apparent that the two hit hypothesis advanced by Pape, may not fully explain the clinical SIRS scenario as there is a heterogenous clinical response to injuries of similar severity.

When considering the underlying pathophysiology of a variable clinical response, it may be an understanding of genetic polymorphism that may help identify the patients at risk of SIRS. This understanding may also permit the early management of patients unlikely to develop SIRS with Early Total Care, thereby minimizing the morbidity of prolonged ICU and inpatient stays.

The heterogeneity may be due to the a leak of mitochondrial DNA from the mitochondria to the cytoplasm of the host cell and the blood stream. The mitochondrial DNA, which is similar to bacterial DNA may elicit a response not unlike that of bacterial infection, though the interaction of DAMPs with the surrounding cells. This may trigger SIRS, through the body's misinterpretation of the injury for one created by a bacterial invasion. This lecture will help explain why this may be a viable mechanism for SIRS and how this may eventually help understand SIRS and improve patient management in multi-trauma.