Introduction

The development of acute renal failure (ARF) in the perioperative period continues to be a serious condition associated with high morbidity and mortality rates which have been unchanged for several decades. Once ARF is established, its maintenance phase is dependent on several mechanisms that interact with cellular integrity ***(Sear, 2005).***

For diagnostic and aetiological purposes, acute renal failure has historically been divided into three distinct entities determind by basic pathophysiology. Prerenal, renal or intrinsic and postrenal or obstructive(***(Jarnberg, 2007)***.

In the surgical setting, the initial insult of acute renal failure is prerenal with renal hypoperfusion and subsequent medullary hypoxia***(Carmichael, 2003).***

Acute renal failure can occur following major surgery(cardiopulmonary bypass, abdominal aortic aneurysm repair).predisposing factors include massive haemorrhge, sepsis, diabetes, hypertension, cardiac disease, peripheral vascular disease, chronic renal impairment, old age and recent exposure to nephrotoxic agents***(sykes and cosgrove, 2007).***

Renal protection remains our best weapon to prevent morbidity, and mortality caused by ARF and the main focus of this essay is on assessing clinical and experimental interventions to prevent ARF. Unfortunately, existing pharmacological and other interventions show a rather limited efficacy in preventing ARF***(Jones and Lee, 2007).***

If survival is to be achieved in the setting of severe ARF a procedure that replaces excretory renal function and restores homeostasis becomes necessary and so renal replacement therapy must be initiated ***(Palevsky, 2005)***.