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The 2000s, the joint efforts of specialists in fields including nephrology, intensive care medicine, and cardiovascular medicine led to the introduction of a novel concept known as acute kidney injury (AKI). As medical care progressed, patients such as high-risk elderly subjects who were not deemed to be candidates for invasive therapy came to be treated in intensive care units (ICUs). As a result, kidney injury as a subset of multiple organ failure was re-considered as AKI, especially in intensive care medicine. AKI was then proposed as a novel disease criteria, as well as novel experimental findings, including in the area of regenerative medicine. It also highlights the clinical-pathophysiological importance of AKI in clinical settings, including differential diagnoses and management of AKI. In the past, the pathology associated with sudden renal impairment was characterized as acute renal failure (ARF). However, in most cases, the AKI is a subclinical condition. Today, the AKI is clearly distinguished from ARF and renal failure. The criteria for the diagnosis of AKI are based on changes in the serum creatinine concentration, with an emphasis on the glomerular filtration rate (GFR) determined by the Modification of Diet in Renal Disease (MDRD) Study equation. The key feature of AKI is a rapid decline in GFR, which is associated with a decrease in urine output. The AKI is characterized by an acute, reversible reduction in kidney function that occurs secondary to illness or injury.

The management of AKI is crucial, as the mortality rate is significantly higher in patients with AKI compared to those without. Early recognition and intervention are essential in preventing AKI or minimizing its impact. The management of AKI involves the use of renal replacement therapy and multiple organ support therapy. Moreover, special emphasis is placed on the potential role of extracorporeal therapies in patients affected by H1N1 pandemic.

In recent years, the field of AKI has expanded significantly, with advances in understanding the pathophysiology and clinical implications of AKI. The focus has shifted from a single disease entity to multiple subtypes of AKI, each with distinct pathophysiologic mechanisms and clinical presentations. The potential role of extracorporeal therapies, including kidney replacement therapy and multiple organ support therapy, has been recognized.

The topic of AKI is highly relevant and continues to evolve, with a growing body of evidence supporting the importance of early recognition and intervention. The future of AKI management is likely to involve a multidisciplinary approach that combines advances in basic science, clinical research, and technological innovations.
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Acute Renal Failure in the Critically Ill On-line HDF represents a major technical development in the delivery of hemodialysis therapy: It combines the properties of increased diffusion and convective removal, and it can be used as an alternative to continuous renal replacement therapy (CRRT) in critically ill patients. However, the effectiveness and safety of this technique have not been fully elucidated, and further research is needed to better understand its role in the management of acute renal failure.

Continuous Renal Replacement Therapy: Background and Goal of Study
Acute kidney injury (AKI) after coronary artery bypass grafting (CABG) is one of the main complications that can occur during cardiac surgery. AKI is associated with increased morbidity and mortality, and it is often more severe than expected based on preoperative factors. The aim of this study is to assess the correlation between three urinary biomarkers (Microalbumine (MA), Neutrophil gelatinase-associated lipocalin (NGAL), Kidney injury molecule-1(KIM-1)) and acute kidney injury in CABG patients.

Methods
A total of 70 patients were included in this study. The primary outcome was AKI, defined as ≥25% decrease in glomerular filtration rate. The GFR was calculated as creatinine clearance rates with 24-hour urine collection. The single urine samples for MA and NGAL were obtained at postoperative 2-h and for KIM-1 at 24-h.

Results and Discussion
AKI was identified in 18 (25.7%) patients while other 52 patients (74.3%) were classified as non-AKI. The MA and NGAL were significantly higher in AKI patients than in non-AKI patients. The 2-h NGAL/Cr values correlated with length of stay. Other urinary markers also showed promise in predicting AKI, although further research is needed to fully understand their role in the management of AKI after CABG.

Conclusion
Understanding the pathophysiology of AKI after CABG and the role of biomarkers such as MA, NGAL, and KIM-1 in predicting and monitoring AKI is crucial in improving patient outcomes. Further research is needed to validate the use of these biomarkers in clinical practice and to develop targeted therapeutic interventions to prevent and treat AKI after CABG.

Cardiovascular surgery, among many others. This second edition is an authoritative guide and reference for both novices and experts in the medical imaging sciences who have an interest in the application of CT imaging and ultrasonography. The latest agents available receive due attention, as do adverse reactions. A final section considers the use of contrast media in nuclear medicine.
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Kidney Disease in the Cardiac Catheterization Laboratory

Brain circulation is a true road map that consists of large extended navigation territories and a number of unimagined and improving patient care. The effects of AKI and its consequences on healthcare expenditures are also addressed from several perspectives. AKI management requires identifying patients at risk and characterizing early kidney damage by using biomarkers. Other important topics include the sequelae of AKI and AKI in special populations such as children, the elderly, and those with cancer. The book summarizes recent advances in various settings. A reappraisal of current definitions and staging classifications for AKI in the literature is followed by a description of new criteria for such as cardiovascular surgery and imaging techniques. Exposure to potentially nephrotoxic drugs, such as new chemotherapeutic agents, is also proving to be a cause of AKI. This book hospitalized patients. In recent years, occurrence of AKI events has risen due to a growing susceptibility of fragile and elderly subjects and an increase in the use of complex procedures.

What Should We Know About Prevented, Diagnostic, and Interventional Therapy in Coronary Artery Disease

Acute Kidney Injury (AKI) is a complex syndrome that is prevalent among hospitalized patients. In recent years, occurrence of AKI events has risen due to a growing susceptibility of fragile and elderly subjects and an increase in the use of complex procedures.

On-Line Hemodiafiltration: The Journey and the Vision

Part II Further, in Part II I have endeavored to include the study to assess changes in Cystatin C (CyC) after 48 h post contrast media exposure, and to know whether it was a reliable indicator of acute kidney injury and the validity of a risk scoring tool for contrast-induced acute kidney injury (CI-AKI). …….. Dr. H. K. Saboowala.

relevance to early AKI. It was found that 56.2% of patients of AKI group had normal levels of serum creatinine in early phase, while all patients had elevated serum cystatin C at same

Several healthy subjects were studied and AKI patients over a period of 2 years at one of tertiary care hospital. Serum creatinine and serum cystatin C were studied and analyzed in important therapeutic decisions. Moreover, serum cystatin C is not affected by · Gender, · Age, · Race, · Muscle mass and also does not suffer from lag period for its rise in early AKI.

injury (AKI), until moderate to severe reduction in glomerular filtration rate (GFR) occurs. Thus its use for estimating GFR in early AKI delays detection of kidney damage and making

Clinical Decisions in Nephrology, Hypertension and Kidney Transplantation

Part I "Serum Cystatin C (sCy C)" - Serum creatinine level does not increase in patients with acute kidney

failure syndrome has focused on the role of many soluble "mediators of injury" (cytokines, leukotrienes, prostanoids etc.). These molecules are likely to participate in the pathogenesis of therapeutic options that provide physicians with a flexible and rapidly evolving armamentarium. The nutrition of these patients, previously limited by the partial efficacy of renal

Close cooperation at all times and must take many complex issues of prevention, pathogenesis, and management into account that they did not previously have to tackle.

critically ill patients, typically in the context of sepsis and multiorgan failure. This epidemiologic change has meant that intensive care physicians and nephrologists must now work in

Textbook of Cardiorenal Medicine

Over the last 10 years the syndrome of severe acute renal failure has progressively changed in its epidemiology. It is now most frequently seen in interested in understanding the disorder and its treatment options.

developments in prevention / treatment / rehabilitation, and renal support. Reporting the latest recommendations from experts, it provides valuable information for those that are

support therapy. The publication at hand contains sections on prerenal azotemia syndromes, dying of' or with' AKI, pathophysiology of sepsis- induced acute kidney injury, suggests that AKI is not a single disease, but a syndrome comprised of multiple, often coexisting, etiologies. Being usually part of multiorgan failure syndrome, it calls for multiple organ

Concepts in Surgical Critical Care

A timely update

Acute kidney injury (AKI) is a serious and as yet incompletely understood disorder in which sudden impairment of kidney function occurs secondary to one or more of a variety of underlying conditions. This disorder is very common in (elderly) ICU patients and is associated with very high mortality. Many of those
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The increasing prevalence of vascular risk factors such as diabetes, obesity and hypertension coupled with increased longevity has resulted in a worldwide epidemic of cardiovascular and chronic kidney disease (CKD). Never has the impact of one organ system on the other been so profound, as in the current context of cardio-renal interactions. The cross talk between the heart and kidneys is highly relevant in the field of interventional cardiology, given the increasing number of transcatheter procedures being performed in patients with underlying kidney disease.

Cardiac CT Imaging, An Issue of Radiologic Clinics of North America, Ebook This book focuses on the diagnostic impact of CT scans in severe abdominal trauma and in non-traumatic causes of abdominal pain. It provides a comprehensive overview of the clinical indications for CT imaging in the abdomen, with a focus on its role in trauma, infection, and inflammation. The book is divided into sections on the different abdominal regions, with each section containing chapters on the specific clinical indications for CT imaging and the technical aspects of image acquisition. The book also includes chapters on the interpretation of CT images, with a focus on the identification of acute and chronic conditions.

The book is an ideal source of practical information for acute care surgeons, radiologists and for all the members of the emergency team. It provides a comprehensive overview of the clinical indications for CT imaging in the abdomen, with a focus on its role in trauma, infection, and inflammation. The book is divided into sections on the different abdominal regions, with each section containing chapters on the specific clinical indications for CT imaging and the technical aspects of image acquisition. The book also includes chapters on the interpretation of CT images, with a focus on the identification of acute and chronic conditions.
complications with high morbidity such as athero-embolic renal disease are featured prominently, to increase awareness in the interventional cardiology and nephrology communities. This book is a valuable resource for interventional and structural cardiologists, general cardiologists and nephrologists dealing with the significant overlap areas between these two specialties. It is also relevant to medical students, trainee physicians in nephrology and cardiology, advanced care practitioners and nursing personnel in both specialties. Given the major impact of kidney function on outcomes in patients undergoing cardiac procedures, this textbook serves as a focal point to integrate relevant clinical data from both specialties and help interventional cardiologists achieve optimal outcomes, especially in patients with (or at risk for) kidney disease.

Controversies in Acute Kidney Injury This issue of Radiologic Clinics of North America focuses on Cardiac CT Imaging, and is edited by Drs. Suhny Abbara and Prabhakar Rajiah. Articles will include: Calcium scoring for cardiovascular CT: how, when and why?; Coronary CTA: acquisition, interpretation and state of the evidence; TAVR and TCMVR; Cardiac masses; Nonischemic cardiomyopathies; Acute and chronic myocardial infarcts, spectrum of manifestations; Pericardial disease; Relevant Adult Congenital Heart Disease; Congenital aortic disease; Cardiac Valves (excluding TAVR); Acute coronary and acute aortic syndromes; Acquired aortic disease (excluding acute aortic syndromes); Cardiac Trauma; Post Cardiovascular surgery findings; and more!