DOWNLOAD PDF ORGAN FAILURE AND PATIENT SURVIVAL

Chapter 1 : Chronic kidney disease: MedlinePlus Medical Encyclopedia

Task 4: Assess current policies and the potential impact of the Final Rule on patient survival rates and organ failure rates leading to retransplantation, including variances by income status, ethnicity, gender, race, or blood type. Abstract. The effects of solid organ ischemic times on transplant.

Pseudomonas aeruginosa 5 cultures , multiresistant Acinetobacter baumanii 3 cultures , Staphylococcus epidermidis 3 cultures , Enterobacter aerogenes 3 cultures , Klebsiella pneumoniae 2 cultures , multiresistant Staphylococcus aureus 2 cultures. Discussion Although support for critically ill patients has significantly improved during the past 50 years, and knowledge about pathophysiology of conditions such as shock, acute renal failure, and acute respiratory failure has also improved, patients have longer survival, but mortality remains high. Patients started dying due to complications of their diseases, rather than the diseases themselves [8, 9]. Actually, MOF became the main cause of death in ICUs, and, since the first studies which described this entity during the s, mortality remains almost the same, in spite of all the research in laboratories and ICUs [2, 4, 6, 8]. Our study presented high mortality rates correlated to the number of systems affected. Worse prognoses are seen in patients with MOF at onset of the sepsis syndrome. The number of samples in this study related to 5 and 6 organ system failures was small and did not permit generalization, although we observed the same trend in whole in the literature with larger samples [2, 3, 5, 6, 8, 9, 13]. Age is an important comorbid factor, increasing the risk of death due to MOF 2. Worse prognoses are seen in patients who are older than 65 years [2, 3, 13, 17]. Gullo and Berlot [13] described a predictable and uniform clinical course of MOF. The first organ involved was lung, with almost all of their patients having this failure. These data are comparable with the mortality observed in ARDS alone. It could be explained by the fact that infection is the most common cause of ARDS [14]. It is probably due to the fact that lungs work as "first filters", activating cells such as neutrophils, lymphocytes, cytokines, lots of mediators leading to an increased capillary permeability, and fibrin-platelet aggregation due to activation of PAF and other septic mediators [14]. There is no consensus in the literature about the incidence and mortality of other system failures. This is probably due to the poor knowledge about sepsis and development of MOF, different parameters used for measuring insufficiency, and failure of systems and different follow up times for patients. Cardiovascular system CVS failure is related to both high incidence and mortality [3, 6, 12]. There are some doubts about when CVS failure appears. Even with an abnormally high cardiac output associated with low systemic vascular resistance, clinical and biochemical alterations tend to occur in advanced phases only. In other studies, however, we did not see the same trend. The kidney is a very important organ within the MOF context, probably predisposing to other failures. A fold increase in mortality in patients with acute renal failure has been observed associated with other system failures [17]. Mortality due to acute renal failure alone decreased during the last 20 years. Acute renal failure secondary to sepsis, however, maintained the same levels 21 of 27 patients with renal failure in our study group died. During the past 20 years, the only observed change is that, now, the patients are older and with more underlying conditions. What is observed during the MOF process is microscopic coagulopathy affecting only microvasculature, leading to a thrombotic process [11]. There are some indirect ways to diagnose disseminated intravascular coagulation DIC such as: We adopted the Glasgow coma scale score but, because a great number of ICU patients were sedated, we could not analyze them. This fact could explain the low incidence observed. We adopted an insulin requirement higher than 5U per hour as criteria for metabolic failure. Five of 54 septic patients presented this failure. The metabolic response during MOF is characterized as "auto cannabalism", a widespread catabolic response that alters carbohydrate, protein, fat, and mineral metabolism. This type of alteration leads to increased production of glucose with increased circulating glucose levels, accelerated proteolysis producing amino acids such as glutamine and alanine, which are the principal substrates for hepatic glucose production and accelerated lipolysis [21]. Another alteration perhaps one of the first is related to alterations in oxidative metabolism of mitochondria, that is considered a vital component in the evolution of sepsis [15]. There is an overwhelming production of free radicals including NO , first by activated leukocytes, complement activation or initiation of ischemia-reperfusion mechanism, after this

mitochondrion becomes the principal source of large amounts of free radicals [15]. There is also an increased amount of hormones stimulated by the infection, such as: Insulin levels are often high, probably due to production of a very important mediator: This mediator is also responsible for induction of hyperglycemia [16]. Insulin level is a good parameter to measure metabolic failure. It reflects not only a primary stimulation, but also insulin resistance. The most frequent bacteria were Pseudomonas aeruginosa, Enterobacter aerogenes, Acinetobacter baumanii, and Staphylococcus epidermidis. We observed a correlation between mortality and number of systems with failure, as well as between mortality and age. World J Surg ; Severity stratification and outcome prediction for multisystem organ failure and dysfunction. A simple multiple system organ failure scoring system predicts mortality of patients who have sepsis syndrome. Prognostic scoring system to predict outcome in peritonitis and intra-abdominal sepsis. Br J Surg ; Determinants of mortality and multiorgan dysfunction in cardiac surgery patients requiring prolonged mechanical ventilation. The role of infection in outcome of multiple organ failure. Multiple organ failure syndrome in the s: Coagulation disorders in septic shock. Intensive Care Med ; Pattern of organ failure following severe trauma. Ingredients of organ dysfuction or failure. Pathogenesis and treatment of the adult respiratory distress syndrome. Arch Intern Med ; Oxidative metabolism in sepsis and sepsis syndrome. J Crit Care 3: Role of catabolic hormones in the hypoketonaemia of injury. The effect of acute renal failure on mortality. Prognosis of patients with acute renal failure in the intensive care unity: A tale of two eras. Mayo Clin Proc ; Septic shock, multiple organ failure and disseminated intravascular coagulation: The spectrum of septic encephalopathy. Pneumonia complicating abdominal sepsis: An independent risk factor for mortality.

Chapter 2 : Hospice Care & Eligibility for Kidney Failure Patients | VITAS Healthcare

Task 4: Assess current policies and the potential impact of the Final Rule on patient survival rates and organ failure rates leading to retransplantation, including variances by income status, ethnicity, gender, race, or blood type.

The rationale for including these individuals is that reduction in kidney function to this level or lower represents loss of half or more of the adult level of normal kidney function, which may be associated with a number of complications such as the development of cardiovascular disease. Hence, British guidelines append the letter "P" to the stage of chronic kidney disease if protein loss is significant. Kidney damage is defined as pathological abnormalities or markers of damage, including abnormalities in blood or urine tests or imaging studies. ESKD[edit] The term "non-dialysis-dependent chronic kidney disease" NDD-CKD is a designation used to encompass the status of those persons with an established CKD who do not yet require the life-supporting treatments for kidney failure known as renal replacement therapy RRT, including maintenance dialysis or kidney transplantation. The condition of individuals with CKD, who require either of the two types of renal replacement therapy dialysis or transplant , is referred to as the end-stage kidney disease ESKD. Ultrasound[edit] Renal ultrasonography is useful for diagnostic and prognostic purposes in chronic kidney disease. Whether the underlying pathologic change is glomerular sclerosis, tubular atrophy, interstitial fibrosis or inflammation, the result is often increased echogenicity of the cortex. The echogenicity of the kidney should be related to the echogenicity of either the liver or the spleen Figure 22 and Figure Moreover, decreased renal size and cortical thinning are also often seen and especially when disease progresses Figure 24 and Figure However, kidney size correlates to height, and short persons tend to have small kidneys; thus, kidney size as the only parameter is not reliable. Hyperechoic kidney without demarcation of cortex and medulla. Control of blood pressure and treatment of the original disease are the broad principles of management. Other[edit] Aggressive treatment of high blood lipids is warranted. Guidelines recommend treatment with parenteral iron prior to treatment with erythropoietin. Although the evidence for them is limited, phosphodiesterase-5 inhibitors and zinc show potential for helping men with sexual dysfunction. Prognosis[edit] CKD increases the risk of cardiovascular disease, and people with CKD often have other risk factors for heart disease, such as high blood lipids. The most common cause of death in people with CKD is cardiovascular disease rather than kidney failure. Chronic kidney disease results in worse all-cause mortality the overall death rate which increases as kidney function decreases. Transplantation aside, high-intensity home hemodialysis appears to be associated with improved survival and a greater quality of life, when compared to the conventional three-times-a-week hemodialysis and peritoneal dialysis. African Americans are at greater risk due to a prevalence of hypertension among them. About one of five adults with hypertension and one of three adults with diabetes have CKD. Other health conditions that may lead to CKD are obesity, high cholesterol, a family history of the disease, lupus, and other forms of cardiovascular diseases. Chronic kidney disease was the cause of , deaths globally in , up from , deaths in Administration of antihypertensive drugs generally halts disease progression in white populations but has little effect in slowing kidney disease among blacks, and additional treatment such as bicarbonate therapy is often required. Lack of nocturnal reduction in blood pressure among groups of African Americans is also offered as an explanation, [66] which lends further credence to a genetic cause of CKD racial disparities. A high and so-far unexplained incidence of CKD, referred to as the Mesoamerican nephropathy , has been noted among male workers in Central America, mainly in sugar cane fields in the lowlands of El Salvador and Nicaragua. The American Kidney Fund is a national nonprofit organization providing treatment-related financial assistance to one of every five dialysis patients each year. The Renal Support Network is a nonprofit, patient-focused, patient-run organization that provides nonmedical services to those affected by CKD. The American Association of Kidney Patients is a nonprofit, patient-centric group focused on improving the health and well-being of CKD and dialysis patients. The Renal Physicians Association is an association representing nephrology professionals. Kidney Health Australia serves that country. The International Society of Nephrology is an international body representing specialists in kidney diseases. Other animals[edit] The total rate of CKD in dogs was 16 cases per 10, years.

The mortality rate of CKD was 10 deaths per 10, The breeds with the highest rates were the Bernese mountain dog, miniature schnauzer and boxer. The Swedish elkhound, Siberian husky and Finnish spitz were the breeds with the lowest rates. These include the angiotensin receptor blocker ARB olmesartan medoxomil and sulodexide , a mixture of low molecular weight heparin and dermatan sulfate.

Chapter 3 : Kidney Disease Statistics for the United States | NIDDK

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Assessing the Impact Any strategy to expand organ allocation areas, for example, as described in this report, would have to take into account the very significant efforts devoted to matching a suitable donor with a suitable recipient, including the mechanisms currently used by the OPO system to expedite organ recovery and distribution. Given current biological constraints, any format must have as a central goal an organ allocation policy that serves to minimize ischemic time within reasonable limits in locating a potential recipient. That this function can be performed for some organs on a large geographic basis with some efficiency is attested to by current practice nationwide as well as the results within regional sharing programs. Health outcomes data of several different types will be needed to assess and monitor the impact of biological factors on the organ distribution and allocation system. The data collected should inform the evaluation of minimum performance criteria for the organ procurement process and the transplantation process itself because they may have an impact on organ viability. Rigorous evaluation of the procurement process would appear to be a sound principle. Data provided by the United Network of Organ Sharing UNOS suggest that between and or percent of livers recovered per year are not transplanted. It is difficult to ascertain the exact reasons for this, although possibilities include a marginal donor, difficulty in finding a second center in a timely manner after the first choice rejects the organ, or the finding of extensive steatosis or hepatitis in the donor organ. Each of these losses may be unavoidable. Alternatively, many of these lost opportunities might be avoided by improved communication and tracking-for example, data on the time from notification of a possible donor to the time that formal contact between the OPO and family is established; time to obtain permission for donation; time to scheduling of organ harvest; duration of the organ harvest procedure; number of organs procured but not used; and cold ischemic time of procured organs stratified by appropriate geographic criteria e. Transplant center-based measures would likely include the number of delivered but discarded organs; number of transplanted organs with primary nonfunction or delayed graft function; and the number of patients requiring retransplantation. Both acute and chronic organ survival could be followed and analyzed by appropriate demographics to suggest where more efficient organ allocation might be implemented to maximize organ utilization. A method to ensure the accuracy of data reporting as well as the timely availability of data is essential. Despite the variable nature of patients and donors, other parameters that are well within the control of the system may be associated with divergent results. Appropriate and timely data analysis will strengthen the ability of the medical and allied communities to make strategic decisions in this regard. Promulgation and enforcement of minimum performance guidelines should help optimize graft survival of the overall population. Given the critical nature of this system, all involved parties should be monitored for quality control and quality assurance and for compliance with recommended methods and processes. Lastly, appropriate measures are needed to assess the impact of the Final Rule on the biological and practical measures that affect organ failure and patient survival. It must also be recognized that as methods for preservation or other technologies change, the system must be flexible enough to incorporate new data. The National Marrow Donor Program is offered as an example of a system that has operated well with respect to many of these factors see Box National Marrow Donor Program. Computer Simulation Models Historically, the primary approach to exploring the impact of various changes on the allocation system has been through the use of computer simulation models. These models allow the user to input various characteristics of the organ allocation system e. As an illustration, change from the current allocation policy to a system using expanded allocation areas is generally expected to increase the number of status 1 patients receiving liver transplants and decrease the number of status 3 patients receiving transplants. Depending on the assumptions of the model, this change can lead to either increased or decreased posttransplant survival. The outcomes and conclusions of the simulation models are highly dependent on the assumptions upon which they are based. In general, the Pritsker model shows that national organ sharing will result in more repeat transplants and poorer

posttransplant survival than will the current system Edwards and Harper, Although there is some evidence of reduced pretransplant mortality, it is at the expense of increased posttransplant mortality. The two models differ slightly because the CONSAD model assumes that, under a national sharing system, status 3 patients are at increased risk of death following transplant. Furthermore, they were able to validate their simulation model results using the rates actually observed in the population of transplant patients over time. Posttransplant Patient Survival In an effort to better understand the determinants of organ failure and posttransplant survival, the committee examined posttransplant mortality data for liver transplant recipients who were transplanted in and , using the data provided to this committee by UNOS. Attention was restricted to this more current period because of the change by UNOS in to the definitions of medical urgency status categories. This time restriction severely limits both the length of follow-up and the number of transplanted patients for which follow-up information was available. Therefore, this analysis should be replicated as more follow-up data under the new status system become available. The sample was comprised of 1, transplanted patients in status categories 1, 2B, and 3. The follow-up period ranged from 0. In addition, OPO-specific effects were included as a random effect in the model. A mixed-effects "person-time" logistic regression model was used to analyze these data and follows directly from the previously described mixed-effect multinomial logistic regression model, where interest is restricted to only two outcomes i. These results are not readily explainable. The results found may be explained with the fact that, as a general rule, smaller OPOs are serving lower volume transplant centers. There is considerable health services research indicating that, for a variety of other surgical procedures, there is a positive correlation between volume and patient outcomes Hannan, ; Hosenpud, Although the committee did not find comparable research for liver transplantation, it did find that the Report of Center Specific Graft and Patient Survival Rates, produced by UNOS UNOS, , contains a table showing that several of the transplant centers doing 25 or fewer liver transplants had 1-year graft survival rates significantly lower than expected, given the health status of their patients see Fig. Further research is needed before any definitive conclusion can be drawn. Therefore, the committee is reluctant to draw any inference as to whether or how graft and patient survival might be affected by the broader sharing of organs. Conclusions Ischemic times for solid organs have not been rigorously evaluated in the past and they are an important factor in the calculus of allocation. The committee reviewed existing literature and made judgments based on this information that are in general agreement with current practices. Data analysis also supports the previously reported association between volume and outcome-in this case, larger OPOs are associated with decreased mortality rates following transplantation. Tables through follow beginning on page Summary of Literature on Cold Ischemic Times.

Chapter 4 : End Stage Renal Disease (ESRD) | Johns Hopkins Medicine Health Library

The prognosis of patients with kidney failure varies from person to person due the unpredictable nature of the disease. Factors including: the duration, chances of complications, probable outcomes, and recovery period are all determined by assessing the patient's distinctive characteristics.

Cause[edit] The condition usually results from infection , injury accident, surgery , hypoperfusion and hypermetabolism. The primary cause triggers an uncontrolled inflammatory response. Sepsis is the most common cause of Multiple Organ Dysfunction Syndrome and may result in septic shock. In the absence of infection, a sepsis-like disorder is termed systemic inflammatory response syndrome SIRS. Both SIRS and sepsis could ultimately progress to multiple organ dysfunction syndrome. However, in one-third of the patients no primary focus can be found. Currently, investigators are looking into genetic targets for possible gene therapy to prevent the progression to Multiple Organ Dysfunction Syndrome. However, they are essential components of a normal healthy immune response , so there is risk of increasing vulnerability to infection, which can also cause clinical deterioration. Some have developed a mouse model sepsis via cecal ligation and puncture CLP. Lung , Liver and kidney tissue destruction were measured by assessing malondialdehyde and myeloperoxidase activity; these last two are endogenous oxidizing compounds produced during tissue inflammation. The authors assessed the level of neutrophil infiltration in lung and liver tissue. IL protein expression was measured using immunohistochemistry. Their results show significantly reduced organ damage by IL gene transfer, as quantified by reduced myeloperoxidase activity in the lung , liver and kidney. The malonialdehyde level was not affected by the transfer into the liver. The livers of the mice infected with the adenoviral vector showed reduced neutrophil activity. The investigators concluded that increased IL expression significantly reduced sepsis -induced multiple organ injury. Pathophysiology[edit] A definite explanation has not been found. Local and systemic responses are initiated by tissue damage. Respiratory failure is common in the first 72 hours. Subsequently, one might see liver failure 5â€”7 days , gastrointestinal bleeding 10â€”15 days and kidney failure 11â€”17 days. This results in increased gut permeability , changed immune function of the gut and increased translocation of bacteria. Liver dysfunction leads to toxins escaping into the systemic circulation and activating an immune response. This results in tissue injury and organ dysfunction. It is thought that following the initial event cytokines are produced and released. The pro-inflammatory mediators are: Hypoxemia causes cell death and organ dysfunction. If bacteria triggers leukocytes, mitochondrial DNA may do the same. When confronted with bacteria, white blood cells, or neutrophil granulocytes , behave like predatory spiders. They spit out a web, or net, to trap the invaders, then hit them with a deadly oxidative blast, forming neutrophil extracellular traps NETs. This results in catastrophic immune response leading to multiple organ dysfunction syndrome. Using similar physiologic variables the Multiple Organ Dysfunction Score was developed. Stage 1 the patient has increased volume requirements and mild respiratory alkalosis which is accompanied by oliguria , hyperglycemia and increased insulin requirements. Stage 2 the patient is tachypneic , hypocapnic and hypoxemic ; develops moderate liver dysfunction and possible hematologic abnormalities. Stage 3 the patient develops shock with azotemia and acid-base disturbances; has significant coagulation abnormalities. Definition[edit] Multiple organ dysfunction syndrome is the presence of altered organ function in acutely ill patients such that homeostasis cannot be maintained without intervention. It usually involves two or more organ systems. Therapy therefore is usually mostly limited to supportive care, i. Maintaining adequate tissue oxygenation is a principal target. Starting enteral nutrition within 36 hours of admission to an intensive care unit has reduced infectious complications. Since the s the mortality rate has not changed. For many years, some patients were loosely classified as having sepsis or the sepsis syndrome. In more recent years, these concepts have been refined â€” so that there are specific definitions of sepsis â€” and two new concepts have been developed:

Chapter 5 : Sepsis and Kidney Failure - Sepsis Alliance

Multiple organ dysfunction syndrome (MODS), also known as multiple organ failure (MOF), total organ failure (TOF) or multisystem organ failure (MSOF), is altered organ function in an acutely ill patient requiring medical intervention to achieve homeostasis.

Best wishes to your dad on a full recovery. Robynnlynn 4 years ago Yes they can. My husband is recovering. He had triple strep pneumonia, kidney failure and a secondary pneumonia. He was in an induced coma for 18 days and had dialysis. He also had a trachea. It was 7 weeks before I finally heard him speak again. Yesterday they corked his trachea. My prayers are with you and your family as you go through this. Keep the faith and stay positive. There were complications and it did not go well. She was in ICU and unconscious. She was on the maximum support they could give her. Despite everything, she did improve a little bit at a time. She became conscious after 14 days, 7 days later she was transferred back to our local hospital. Following a transfer to a community hospital for rehabilitation, she was released from hospital last Monday 25th August. She seems to have no lasting effects of the kidney or liver failure. She does have some problems with the leg that the pump for her heart was thread through, it was also the same leg they had used some of the vein for the heart repair. She still has a long way to go to regain her muscle lost during that time and her heart was patched up rather than repaired, but we have her back again. The doctors do give you the worst case scenario, but I think it is right that they do warn you. They never gave up though, changing medication and dosage to see if it helped, when she was at her lowest, even though she is 84 years old and I thought they may not try as hard because of her age. I really felt that they cared about her and so did a lot of her ICU nurses. As others have said, keep talking to your dad. Wishing all the best for you, your dad and your family, at what is a really difficult time.

Chapter 6 : Multiple organ failure in septic patients

This prospective study describes the current prognosis of patients in acute Organ System Failure (OSF). Objective definitions were developed for five OSFs, and then ICU admissions from 13 hospitals were monitored. The number and duration of OSF were linked to outcome at hospital discharge for.

This damage can cause wastes to build up in the body. Kidney disease can cause other health problems, such as heart disease. If you have kidney disease, it increases your chances of having a stroke or heart attack. Major risk factors for kidney disease include diabetes, high blood pressure, and family history of kidney failure. Sudden and temporary loss of kidney function. Any condition that causes reduced kidney function over a period of time. Chronic kidney disease may develop over many years and lead to end-stage kidney or renal disease ESRD. The five stages of CKD are: Kidney failure requiring dialysis or transplant for survival. Treatment to filter wastes and water from the blood. When their kidneys fail, people need dialysis to filter their blood artificially. The two main forms of dialysis are hemodialysis and peritoneal dialysis. Total and permanent kidney failure treated with a kidney transplant or dialysis. The rate at which the kidneys filter wastes and extra fluid from the blood; measured in milliliters per minute. Condition in which the urine has more-than-normal amounts of a protein called albumin. High blood pressure and diabetes are the main causes of CKD. More than , Americans have kidney failure. Of these, , individuals are on dialysis, and roughly , live with a functioning kidney transplant. Kidney disease often has no symptoms in its early stages and can go undetected until it is very advanced. Each year, kidney disease kills more people than breast or prostate cancer. In , more than 47, Americans died from kidney disease. The largest increase occurred in people with Stage 3 CKD, from 4. Awareness is higher among people with Stage 4 CKD, who often experience obvious symptoms. The prevalence of CVD is Atherosclerotic heart disease is the most frequent CVD linked to CKD; its prevalence is more than 40 percent among people ages 66 and older. The percentage of people who undergo cardiovascular procedures is higher among those with CKD than among those without CKD. This decrease was observed across all age and race groups. For Medicare patients ages 66 and older with an AKI hospitalization in , the cumulative probability of a recurrent AKI hospitalization within 2 years was 48 percent. Among Medicare patients ages 66 and older with a first AKI hospitalization, the in-hospital mortality rate in was 9. African-Americans are about 3. Hispanics are about 1. As of December 31, , The leading causes of ESRD in children during were: The most common initial ESRD treatment modality among children overall was hemodialysis 56 percent. The number of children listed for incident and repeat kidney transplant was 1, in Kidney Transplants 17, kidney transplants were performed in the United States in Less than one-third of the transplanted kidneys were from living donors in From to , there was a 3. Among candidates newly wait-listed for either a first-time or repeat kidney-alone transplant in , the median waiting time to transplant was 3. The number of deceased donors increased significantly since , reaching 8, in The rate of deceased donors among African Americans more than doubled from to In , the probability of 1-year graft survival was 92 percent and 97 percent for deceased and living donor kidney transplant recipients, respectively. The probability of patient survival within 1 year post-transplant was 95 percent and 98 percent in deceased and living donor kidney transplant recipients, respectively, in Since , the probabilities of graft survival and patient survival have steadily improved among recipients of both living and deceased donor kidney transplants. Morbidity A notable decrease in hospitalization rates occurred from to Rates decreased by 11 percent for CKD patients and by However, rates of both overall and cause-specific admissions increased with advancing stages of CKD. Among hemodialysis patients, the overall number of hospitalizations for ESRD in was 1. Male patients had slightly higher mortality rates Mortality rates continue to decrease for dialysis and transplant patients, having fallen by 28 percent and 40 percent, respectively, since Arrhythmias and cardiac arrest alone were responsible for more than one-third 37 percent of CVD deaths. More than 70 percent of Medicare spending for CKD patients ages 65 and older was incurred by those who also had diabetes, congestive heart failure, or both. Although spending was Medicare fee-for-service spending for ESRD beneficiaries rose by 1. Published February 16, Accessed December 6, The NIDDK translates and disseminates research findings through its

clearinghouses and education programs to increase knowledge and understanding about health and disease among patients, health professionals, and the public.

Chapter 7 : Multiple organ dysfunction syndrome - Wikipedia

Multiple organ failure (MOF) is the leading cause of morbidity and mortality in critically ill patients [].Recent studies report an incidence of MOF of between 5% and 25% for trauma patients admitted to the intensive care unit (ICU) [2 - 4].

Administration of intravenous IV fluids in large volumes to replace depleted blood volume Diuretic therapy or medications to increase urine output Close monitoring of important electrolytes such as potassium, sodium, and calcium Medications to control blood pressure Specific diet requirements In some cases, patients may develop severe electrolyte disturbances and toxic levels of certain waste products normally eliminated by the kidneys. Patients may also develop fluid overload. Dialysis may be indicated in these cases. Treatment of chronic renal failure depends on the degree of kidney function that remains. Dialysis is a procedure that is performed routinely on persons who suffer from acute or chronic renal failure, or who have ESRD. The process involves removing waste substances and fluid from the blood that are normally eliminated by the kidneys. Dialysis may also be used for individuals who have been exposed to or ingested toxic substances to prevent renal failure from occurring. There are two types of dialysis that may be performed, including the following: Peritoneal dialysis is performed by surgically placing a special, soft, hollow tube into the lower abdomen near the navel. After the tube is placed, a special solution called dialysate is instilled into the peritoneal cavity. The peritoneal cavity is the space in the abdomen that houses the organs and is lined by two special membrane layers called the peritoneum. The dialysate is left in the abdomen for a designated period of time which will be determined by your doctor. The dialysate fluid absorbs the waste products and toxins through the peritoneum. The fluid is then drained from the abdomen, measured, and discarded. There are three different types of peritoneal dialysis: CAPD does not require a machine. Exchanges, often referred to as passes, can be done three to five times a day during waking hours. CCPD requires the use of a special dialysis machine that can be used in the home. This type of dialysis is done automatically, even while you are asleep. IPD can be done at home, but usually is done in the hospital. Possible complications of peritoneal dialysis include an infection of the peritoneum, or peritonitis, where the catheter enters the body. Peritonitis causes fever and stomach pain. You may need to reduce your calorie intake, since the sugar in the dialysate may cause weight gain. A special type of access, called an arteriovenous AV fistula, is placed surgically, usually in your arm. This involves joining an artery and a vein together. An external, central, intravenous IV catheter may also be inserted, but is less common for long-term dialysis. Hemodialysis is usually performed several times a week and lasts for four to five hours. Because of the length of time hemodialysis takes, it may be helpful to bring reading material, in order to pass the time during this procedure. During treatment you can read, write, sleep, talk, or watch TV. At home, hemodialysis is done with the help of a partner, often a family member or friend. If you choose to do home hemodialysis, you and your partner will receive special training. Possible complications of hemodialysis include muscle cramps and hypotension sudden drop in blood pressure. Hypotension may cause you to feel dizzy or weak, or sick to your stomach. Side effects are avoided by following the proper diet and taking medications, as prescribed by your doctor. You may eat foods high in protein such as meat and chicken animal proteins. You may need to limit the amount you drink. You may need to avoid salt. You may need to limit foods containing mineral phosphorus such as milk, cheese, nuts, dried beans, and soft drinks. Dialysis treatments both hemodialysis and peritoneal dialysis are not cures for ESRD, but will help you feel better and live longer. Over the years, ESRD can cause other problems such as bone disease, high blood pressure, nerve damage, and anemia having too few red blood cells. You should discuss prevention methods and treatment options for these potential problems with your doctor.

Chapter 8 : Prognosis of Renal Failure In Elderly Patients-Kidney Failure

Multiple organ failure is a life threatening condition which requires a patient to be treated within the ICU setting. When one body system such as the heart experiences failure it has multiple effects upon the other organs.

How can I approach the hospice discussion with my loved one s? When is the right time to ask about hospice? When patients decide to discontinue dialysis, they still have immediate medical needs and personal wishes. Families also have concerns. Hospice care addresses the physical, emotional and spiritual needs that can be significant at the end stage of kidney failure. In general, hospice patients have six months or less to live. When patients living with kidney failure choose to forgo dialysis, how long they can live depends on the amount of kidney function they have, how severe their symptoms are and their overall medical condition. Only a doctor can make a clinical determination of life expectancy. Patients and family members can also act as their own advocates to receive the care they need. You, your loved one or your physician may request an evaluation to see if hospice is an appropriate option for care. What can hospice do for a patient with kidney failure? The goal of hospice is to relieve physical and emotional distress so patients can retain their dignity and remain comfortable. What are hospice "goals of care? Pain and symptom control â€" VITAS specialists in pain and symptom management help manage pain, stiffness, fatigue, loss of appetite, nausea, itching, difficulty breathing, difficulty sleeping, anxiety, depression and other symptoms common to kidney failure. This ensures patients are able to enjoy life and remain in control of day-to-day decisions for as long as possible. Care for patients wherever they live â€" The hospice team brings services to patients in their homes, long term care facilities or assisted living communities. If symptoms become too difficult to manage at home, inpatient hospice services can provide round-the-clock care until the patient is able to return home. In addition, hospice coordinates and supplies all medications, medical supplies and medical equipment related to the diagnosis to ensure patients have everything they need. Emotional and spiritual assistance â€" Hospice has the resources to help patients maintain their emotional and spiritual well-being. What can hospice do for the family of a patient with kidney failure? Family members may have to make difficult healthcare and financial decisions, act as caregivers and provide emotional support to others. If the decision is made to stop medical support, families experience strong emotions and feel overwhelmed. Hospice helps families of patients with kidney failure by providing: Caregiver education and training â€" The family caregiver is vital in helping hospice professionals care for the patient. As the patient gets weaker, symptoms increase and communication becomes more difficult. The heartbeat of VITAS after hours, Telecare provides trained hospice clinicians around the clock to answer questions or dispatch a member of the team to the bedside. Emotional and spiritual assistance â€" Hospice meets the needs of loved ones along with those of the patient. Social workers can assist families with financial planning and finding financial assistance during hospice care. After a death, they can help grieving families find financial assistance through human services, if needed. Respite care â€" Caring for a loved one with end-stage kidney failure can cause tremendous stress. A caregiver can take a break of up to 5 days while the patient is cared for in an inpatient setting. Read more about respite care. Bereavement services â€"The hospice team works with surviving loved ones for a full year after a death to help them express and cope with their grief in their own way. Read more about our grief and bereavement services. What are the overall benefits of hospice care? If you or a loved one is facing a life-limiting illness, you may have heard the term hospice. Friends or family might have told you about the specialized medical care for patients or the support services for loved ones. But most people are unaware of the many other benefits of hospice. Hospice gives patients and families the support and resources to see them through this challenging chapter of life and help patients remain in comfortable and familiar surroundings. When the hospice team works with a patient or family, they become participants in the end-of-life process , a very personal experience for any individual. The hospice mission is to care for each person individually. We listen to patients and loved ones. We advocate for them. We work to improve their quality of life. In the last months of life, some people who are seriously ill make frequent trips to the emergency room; others endure repeated hospitalizations. Hospice care reduces rehospitalization: One of the greatest benefits of hospice is the security that comes from knowing that medical

support is available whenever you need it. And VITAS gives families the training, resources and support they need to give their ailing loved ones the care they deserve. Hospice effect on government expenditures among nursing home residents. The final months and days of life are frequently marked by strong emotions and hard decisions. Talking about hospice, even with those closest to you, can be difficult. Here are some tips to get the discussion going. For patients speaking to families Education is key. To begin the conversation about hospice with your family, we offer this helpful resource for you to read and share: Before bringing up hospice, make sure your loved ones have a clear understanding of your health status. People handle difficult information in different ways. If family members are not accepting or understanding of your prognosis, you might want to have your physician, clergy or a trusted friend speak with them on your behalf. Discuss your goals for the future, as well as theirs. As a patient, your greatest concern might be to live without pain, or to stay at home or not to be a burden. Ask your loved ones what their concerns are when they consider the coming days, weeks and months. Explain that hospice is not giving up. Sometimes, out of concern for your feelings, your family or loved ones might be reluctant to raise the issue of hospice care for you. For families speaking to patients Educate yourself first. Being well-informed is the key to having an effective discussion with your loved one about a topic as sensitive as hospice. We encourage you to read and share "Considering Hospice: Asking permission to discuss a difficult topic assures your loved one that you will respect his or her wishes and honor them. For some, the word hospice evokes a false notion of giving up. Explain that hospice is not about surrendering to disease or death. Hospice gives patients options: Reassure your loved one that you will honor his or her right to make choices about what is most important in life. Read more about the control hospice gives the patient and family. Be a good listener. Keep in mind that this is a conversation, not a debate. Hear what the other person is saying. Know that it is normal to encounter resistance the first time you talk about hospice care. Request a hospice evaluation The primary physician may recommend hospice when the time is right. But as anyone who has faced a serious illness knows, patients and family members often must act as their own advocates to receive the care they need and deserve. You, your loved one or your trusted physician may request an evaluation to see if hospice is an appropriate option for care.

Chapter 9 : Organ Failure and Patient Survival - Organ Procurement and Transplantation - NCBI Bookshelf

Multiple organ failure (MOF) is the main cause of death in ICUs, especially affecting septic patients. It is strongly related to number of systems with failure, type of system involved, risk factors such as age, previous chronic diseases, delayed or inadequate resuscitation, persistent infection, immune suppression, and others.

Longer times are sometimes reported in clinical practice with acceptable outcomes. Outcomes vary as a function of many other factors, including age of donor and quality of organ. Page 95 Share Cite Suggested Citation: Organ Procurement and Transplantation: The National Academies Press. It is difficult to ascertain the exact reasons for this, although possibilities include a marginal donor, difficulty in finding a second center in a timely manner after the first choice rejects the organ, or the finding of extensive steatosis or hepatitis in the donor organ. Each of these losses may be unavoidable. Alternatively, many of these lost opportunities might be avoided by improved communication and tracking-for example, data on the time from notification of a possible donor to the time that formal contact between the OPO and family is established; time to obtain permission for donation; time to scheduling of organ harvest; duration of the organ harvest procedure; number of organs procured but not used; and cold ischemic time of procured organs stratified by appropriate geographic criteria e. Transplant center-based measures would likely include the number of delivered but discarded organs; number of transplanted organs with primary nonfunction or delayed graft function; and the number of patients requiring retransplantation. Both acute and chronic organ survival could be followed and analyzed by appropriate demographics to suggest where more efficient organ allocation might be implemented to maximize organ utilization. A method to ensure the accuracy of data reporting as well as the timely availability of data is essential. Despite the variable nature of patients and donors, other parameters that are well within the control of the system may be associated with divergent results. Appropriate and timely data analysis will strengthen the ability of the medical and allied communities to make strategic decisions in this regard. Promulgation and enforcement of minimum performance guidelines should help optimize graft survival of the overall population. Given the critical nature of this system, all involved parties should be monitored for quality control and quality assurance and for compliance with recommended methods and processes. Lastly, appropriate measures are needed to assess the impact of the Final Rule on the biological and practical measures that affect organ failure and patient survival. It must also be recognized that as methods for preservation or other technologies change, the system must be flexible enough to incorporate new data. The National Marrow Donor Program is offered as an example of a system that has operated well with respect to many of these factors see Box Computer Simulation Models Historically, the primary approach to exploring the impact of various changes on the allocation system has been through the use of computer simulation models. These models allow the user to input various characteristics of the organ allocation system e. As an illustration, change from the current allocation policy to a system using expanded allocation areas is generally expected to increase the number of status 1 patients receiving liver transplants and decrease the number of status 3 patients receiving transplants. Depending on the assumptions of the model, this change can lead to either increased or decreased posttransplant survival. The outcomes and conclusions of the simulation models are highly dependent on the assumptions upon which they are based. In general, the Pritsker model shows that national organ sharing will result in more repeat transplants and poorer posttransplant survival than will the current system Edwards and Harper, Although there is some evidence of reduced pretransplant mortality, it is at the expense of increased posttransplant mortality. The two models differ slightly because the CONSAD model assumes that, under a national sharing system, status 3 patients are at increased risk of death following transplant. Furthermore, they were able to validate their simulation model results using the rates actually observed in the population of transplant patients over time. Attention was restricted to this more current period because of the change by UNOS in to the definitions of medical urgency status categories. This time restriction severely limits both the length of follow-up and the number of transplanted patients for which follow-up information was available. Therefore, this analysis should be replicated as more follow-up data under the new status system become available. Page 97 Share Cite Suggested Citation: The mission of NMDP

is to identify hematopoietic stem cell donors and then procure and deliver stem cell transplants to patients who do not have a suitably matched family member donor. This organization has a clearly stated set of minimum performance criteria for both donor harvest procurement and transplant centers. NMDP has also developed criteria that govern allocation e. There is a requirement that any change in the ability of the center to meet any of the above as well as many other criteria must be reported immediately. Acceptance as a center of any sort transplant, donor harvest is dependent on having appropriate computer and communication software and hardware on-site and operational. Strict time criteria exist for merging data with the NMDP central data file. For example, donor recruitment centers must merge these data at least monthly and must use either NMDP-developed software or other software that meets NMDP standards. All centers must meet or exceed the NMDP continuous process improvement indicators. Centers are given frequent feedback on task-appropriate indicators. Data are analyzed centrally, not locally, and feedback enables the center to measure its own performance as well as compare its performance to that of other centers. In addition, an NMDP statistician analyzes the aggregate data to ascertain whether there is systematic improvement or deviation from standards and then recommends actions. There are significant medical differences between solid organ and bone marrow transplantation, as well as many differences in the processes of donor recruitment and organ procurement. However, there are also significant commonalities in making a scarce human resource available to critically ill individuals in a reproducible, effective, and safe fashion. Many of the issues that concern access for the socioeconomically underserved as well as the particular biologic issues that influence organ availability for minority populations are common to both groups. Thus, with due acknowledgment of the divergence between these disciplines, NMDP serves as an illustration of a federally funded organ procurement and allocation organization with a highly regulated set of performance standards for itself and its participating centers. This program demonstrates that a sophisticated data monitoring process that includes a significant quality assurance-quality improvement component can serve a diverse national constituency of small to large procurement and transplant centers. Central data analysis and analyses performed after application by interested parties are made available to the community in a timely fashion. This and other models, thoughtfully adjusted for discipline-specific issues, may provide practical tools to improve and enforce more regularized practice in the area of solid organ procurement, allocation, and transplant. Page 98 Share Cite Suggested Citation: The follow-up period ranged from 0. In addition, OPO-specific effects were included as a random effect in the model. A mixed-effects "person-time" logistic regression model was used to analyze these data and follows directly from the previously described mixed-effect multinomial logistic regression model, where interest is restricted to only two outcomes i. These results are not readily explainable. The results found may be explained with the fact that, as a general rule, smaller OPOs are serving lower volume transplant centers. There is considerable health services research indicating that, for a variety of other surgical procedures, there is a positive correlation between volume and patient outcomes Hannan, ; Hosenpud, Although the committee did not find comparable research for liver transplantation, it did find that the Report of Center Specific Graft and Patient Survival Rates, produced by UNOS UNOS, , contains a table showing that several of the transplant centers doing 25 or fewer liver transplants had 1-year graft survival rates significantly lower than expected, given the health status of their patients see Fig. Further research is needed before any definitive conclusion can be drawn. Therefore, the committee is reluctant to draw any inference as to whether or how graft and patient survival might be affected by the broader sharing of organs. In general this breakdown corresponded to the following definitions: Page 99 Share Cite Suggested Citation: Data analysis also supports the previously reported association between volume and outcome-in this case, larger OPOs are associated with decreased mortality rates following transplantation. Tables through follow beginning on page Page Share Cite Suggested Citation: