PKB XXVII

PENDIDIKAN KEDOKTERAN BERKELANJUTAN XXVII ILMU PENYAKIT DALAM

Comprehensive Management in Internal Medicine

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Dept/KSM Penyakit Dalam FK Umud/RSUP Sanglah,
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Foreword

Internal Medicine is quickly developing in all lines, from basic theories, pathophysiology, diagnostic procedures and therapy. The challenges of new cases and the re-emergence of re-emerging diseases in the era of globalization, modernization and industrialization require clinicians to constantly renew their knowledge and expertise and possess global standard quality to improve medical services. Information on medical science and technology is now easily accessible to anyone, produce an increasingly critical society and bring up challenges for clinicians.

The advancement of Indonesian doctors must be supported by access to regional, national and international scientific communication in the form of scientific forums that present the latest research information and results, as well as a forum for discussion with experts in addition to establishing family bond for doctors.

Pendidikan Kedokteran Berkelanjutan (PKB) Internal Medicine Department, Faculty of Medicine of Udayana University / Sanglah Hospital 2019 is a scientific activity in Internal Medicine topics held annually. In the series of activities of PKB XXVII in Internal Medicine Faculty of Medicine Universitas Udayana / Sanglah Hospital 2019, the update in the field of Internal Medicine will be presented in the form of training (workshops), symposiums, and expert discussions hence the opportunities for interaction between participants and experts are optimal. Development in the field of research is also a concern and we give appreciation in the form of opportunities to compete in oral papers and posters.

Dr. I Wayan Losen Adnyana, SpPD-KHOM

Chairman

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SPEAKERS

Medical science in industrial revolution 4.0 era: challenges and prospects

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Abstract

The concept of the Industrial Revolution 4.0 or The Fourth Industrial Revolution (IR4.0) was coined at the World Economy Forum in Davos in 2016. After that IR4.0 became the world's public discourse, not only affecting the industrial world, but spread to the world of business, education, health, governance and various other aspects of life. Professor Klaus Schwab states "IR4.0", in the end, will not only change what we do but also change who we are. Our personal identity is affected, as is privacy, understanding of ownership, consumption, time devoted to work and leisure, ways to develop careers and maintain relationships with others. Medicine is one of the fields that is strongly influenced by IR4.0, in addition to the world of industry (manufacturing) and business. Technological developments linking digitalization of science and health services, such as the internet of things (IoT), sensors, big data, artificial intelligence, augmented reality, nanotechnology, robotics and 3D printing, along with radical social transformation, increasing interconnectivity will overturn the structure of health service systems. According to The Economist, the health service sector is most likely to benefit from RI4.0 at 45%, compared to education (11%), finance (15%) and Infrastructure (14%). The development of IR4.0 will lead to precision medicine, personalizing medicine, digitally controlled services which ultimately is a better service for patients. The challenges in the future are, inequality in obtaining health services; moral, ethical and value issues; privacy issues and cyber security issues. Moral, social and character education must be emphasized.

Keywords: IR4.0, medicine

HBV Infection Can Not Cure: Why Should We Treat Now?

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Abstract

The development of chronic hepatitis B treatment is still a major challenge, because the treatment of HBV infection is currently only limited to viral suppression and disease control with ongoing treatment for life. This is due to the inability to eliminate cccDNA HBV and partial recovery of immune response defects. currently offered is reducing viral load, increasing immune response and revising therapeutic endpoint targets from sterile cure to functional cure that is currently considered rational and ideal targets, by using a combinatorial strategy DAA (NA) and immunomodulator (PEG-IFN). Besides suppressing HBV replication, Nucleos(t)ide Analogue (NA) can also restore the adaptive immune response, while PEG-IFN can stimulate innate immune responses. PEG-IFN has dual effects, increases the production of Interferon stimulated Gen (ISG) which will encode antiviral proteins and can inhibit HBV transcription by increasing HBV RNA pregenomic (pgRNA) degradation by modifying the cccDNA epigenetic regulation. Post treatment HBs Ag loss should be monitored levels of qHBsAg, HBV DNA, ALT and qHBcrAg annually. In future to achieve sterile cure, combination therapy research that is targeted at various stages of the HBV life cycle is needed.

Keywords: cccDNA, immune response, DAA (direct acting antiviral), Immunomodulator, pgRNA degradation, functional cure, qHBcrAg.

Clinical approaches for optimizing results in management of chronic hepatitis B

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Abstract

Many CHB patients require antiviral therapy to prevent progression to cirrhosis, liver failure, hepatocellular carcinoma, and liver related death.

The introduction of pegylated interferon (PEG-IFN), which renewed the interest for this immune-modulating drug, as well as the introduction of better nucleos(t)ide analogues (NAs), has increase the chance of CHB patients to receive an appropriate treatment. NAs are very effective, but increasing evidence suggests that after hepatitis B e antigen (HBeAg) seroconversion, stopping NA therapy results in a relapse of hepatitis B virus (HBV) infection in the majority of patients. We therefore have to anticipate that NA should be given indefinitely. Thus, the long-term side effects and costs of NA should be taken into account when initiating such therapy.

Both treatment modalities (NA and PEG-IFN) have proven to be effective, but we need some guidance which one should be used NA or PEG-IFN and how to select which patient should be given NA or PEG-IFN or both. Both potent NA (ETV and TDF and TAF) and PEG IFN are belong first line treatment for CHB. In HBeAg-positive patients, PEGIFN results in a response (sustained HBeAg seroconversion 24 weeks posttreatment) in approximately 25% to 30% of patients. In HBeAg-negative patients, a sustained response (HBV DNA <2,000

IU/mL and normal alanine aminotransferase [ALT] 24 weeks posttreatment) occurs in approximately 25% of patients after a finite treatment with PEG-IFN. However, clinical use of PEG-IFN is compromised by suboptimal tolerability and costs. Selection of patients with the highest probability of achieving a response to PEGIFN is therefore essential for optimal use of this agent in clinical practice and to guide physicians in deciding whether to start with PEG-IFN.

Pathogenesis and clinical overview of chronic ITP

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Abstract

ITP stands for Immune thrombocytopenia, lately known as idiopathic thrombocytopenic purpura or immune thrombocytopenic purpura, is an acquired autoimmune disorder that can present as primary disease characterized by an isolated thrombocytopenia in the absence of other causes or disorders that maybe associated with thrombocytopenia. As secondary disease, ITP may associated with other autoimmune diseases or chronic infection. Immune thrombocytopenia (ITP) is one of the more common causes of thrombocytopenia in otherwise asymptomatic adults. The pathogenesis of ITP remains unclear. ITP involves loss of tolerance to glycoproteins expressed on platelets and megakaryocytes. Antiplatelet glycoprotein antibodies cause thrombocytopenia through two mechanisms are by reducing the survival of circulating platelets and by inhibiting the production of new platelets by bone marrow megakaryocytes. In deepth, both antibody-mediated and/or T cell-mediated platelet destruction are consider to be the key processes. In addition, impairment of T cells, cytokine imbalances, and the contribution of the bone marrow niche have now been recognized to be important. The symptoms are primarily related to thrombocytopenia and bleeding, such as petechiae, purpura, epistaxis or other serious bleeding such as intracranial haemorrhage. Patients can also experience fatigue, reduced quality of life and thrombosis event. The mechanism of thrombosis is uncertain yet, but the factor that may contribute to the development of thrombosis include increased levels of prothrombotic, platelet-derived microparticles and complement activation on antibody-coated platelets. Treatment strategies are aimed at the restoration of platelet counts compatible with adequate hemostasis rather than achieving physiological platelet counts. The first line therapy for ITP includes corticosteroids, sometimes in conjunction with intravena immunoglobulin or anti rhesus-D. The second line of therapy may include rituximab, splenectomy or thrombopoetin receptor agonist.

Keywords: Immune, thrombocytopenia, clinical overview

The role of eltrombopag on management of Chronic immune thrombocytopenia

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Abstract

Immune thrombocytopenia (ITP) is an acquired thrombocytopenia with thrombocyte count below 100 x 10^9/L, caused by immune response leading to peripheral platelet destruction and decreased megakaryocyte production. ITP was classified to : *acute ITP, persistent ITP,* and *chronic ITP*. The pathogenesis of ITP before was based on destruction of thrombocyte by autoimmune process in peripheral blood only. Lately, it is believed that megakaryocyte destruction by autoimmune process can cause decrease of thrombocyte production. This latest pathogenesis lead to the new management strategy of ITP using "*thrombopoietin receptor agonist*" (TPO-RA) drug. There are 3 types of treament for patients with chronic ITP : "*wait and watch strategy*", *first-line therapy*; and *second-line therapy*. TPO-RA was included in second line treatment along with splenectomy, Rituximab, and other immunosupressant like Azathioprine, Cyclophosphamide, and *Mycophenolate Mofetil*. TPO-RA includes Eltrombopag and Romiplostim. Eltrombopag bound transmembran domain selectively from thrombopoetin receptor and activating *Janus kinase/STAT signaling pathway* and *MAP kinase*, furtherly stimulating megakaryocyte and thrombocyte production. Romiplostim, a *thrombopoietin mimetic* agent is a *recombinant fusion protein*. A *systematic review* and metanalysis for TPO-RA treatments for chronic ITP showed there is significantly increased response of platelet, decrease of bleeding risk, including major bleeding, and decrease need for rescue medication. As a conclusion, TPO-RA is an effective and safe second line treatment for patients with primary ITP.

Key Words: chronic ITP, treatment, eltrombopag

Approach in diagnosing chronic cough

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Abstract

Cough is intrinsically a protective reflex, but becomes troublesome when hypersensitive and persistent. Chronic cough defined as a cough that persists for longer than 8 weeks, this is the most common presenting symptom in adults who seek medical treatment in an ambulatory setting. Chronic cough is estimated to occur in 10-40 % of the general population worldwide.

The etiologies of chronic cough are numerous and may include pathology from the nose and nasopharynx to the distal bronchial tree. Prospective studies have shown that 3 conditions account for the etiologic cause of chronic cough in 92-100% of immunocompetent, nonsmoking patients with normal chest radiograph findings. In order of frequency, they are as follows: upper airway cough syndrome (UACS) (previously referred to as postnasal drip syndrome (PNDS)), Asthma, and Gastroesophageal reflux disease (GERD), but there

are often multiple causes involved.

Every patient with chronic cough needs a thorough history taken and physical examination performed as part of their evaluation. The first step in making a diagnosis is the history. This should include duration and progression of cough, associated or systemic symptoms such as fever, chills or weight loss, hemoptysis, travel history, current medications, and effective vs. ineffective treatments trialed. The medical history are important to ascertain whether the patient is or has been a smoker; taking an ACE (angiotensin converting enzyme) inhibitor; living in a geographic area endemic for TB or certain fungal diseases, has any systemic symptoms, or a history of cancer, tuberculosis, or AIDS (Acquired Immunodeficiency Syndrome). Specific next steps would depend on diagnostic considerations. Each patient should also have a chest radiograph taken. If the chest radiograph findings are abnormal, further workup depends on the specific finding. Chest CT scan, bronchoscopy, needle biopsy, and sputum studies are all potentially warranted studies if a pulmonary lesion is found. Spirometry can also be done especially if suspicion of asthma and COPD.

Keywords: Chronic Cough; Adult; Spirometry

Comprehensive Management Of Chronic Cough

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Abstract

A cough that occurs > 8 weeks is called a chronic cough, many complaints occur in the community and causes the patient to often visit a physician, but still can't complete thoroughly the chronic cough experienced by the patient. Chronic cough raises problems ranging from mild to no complications until serious illnesses that affect the organ system. Prolonged chronic cough often results in physical, psychological, and social complications. Many conditions underlying chronic cough so it is often difficult to determine the diagnosis of causes of chronic cough. The most commonly diagnosed Triad in chronic cough is post nasal drip, asthma, and GERD. The causes of chronic cough outside the triad are many e.g. chronic bronchitis due to smoking, ACE-I, bronchitis eosiniphilic, tuberculosis, primary lung cancer, heart failure, bronchitis, OSA, environmental exposure, NAEB, cough hypersensitivity syndrome. Chronic cough therapy is based on the cause, but not infrequently in the patient there is more than one underlying condition, so it needs a comprehensive treatment.

Keyword: chronic cough, triad, comprehensive

Pain management in rheumathology case focused on osteoarthritis

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Abstract

Osteoarthritis (OA) has become a global problem. It is one of the chronic diseases and the most common of all joint diseases, affects about 15% of people worldwide. The prevalence is estimated to double by 2020. The changes occur in macro and micro cartilage. Macro changes include softening, fibrillation, and erosion. Micro changes include cartilage degradation and imperfect repair (eg clefts, loss of the cartilage layer, cellular necrosis). The goal of OA treatment is to relieve pain, optimize joint function, inhibit disease progression, prevent complications, reduce dependence on others and improve quality of life.The treatment consists of corection of the inisiating factor, education, physical therapy, occupational therapy, medication, corticosteroid, Diseases modifying OA drugs, operation, and stem cell therapy in the future. NSAIDs is an alternative approach in patients with moderate to severe pain and signs of inflammation. If non-narcotic analgesic therapy is ineffective, NSAID therapy or cyclooxygenase-2 (COX-2) -selective NSAIDs can be given to inhibit the enzymatic activity of cyclooxygenase (COX), which is important for prostaglandin production. Treatment of narcotic analgesics should be provided for patients with severe OA and refractory pain by administering regular doses of non-narcotic analgesics supplemented with non-pharmacological treatment. As for Symptomatics Slow-Acting Drugs for Osteoarthritis (SYSADOAs), diacerin, hyaluronic acid, glucosamine chondroitin could be considered. Surgical options must be considered for patients with symptoms and loss of function that are refractory to non-surgical and non-pharmacological therapies

Keywords: Osteoarthritis, pain management, medication, NSAIDs

NSAID allergy: management and prevention

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Abstract

Adverse drug reactions (ADRs) is an undesirable reactions and reactions to drugs according to the dosage recommended for therapeutic, prophylactic, diagnosis, and for modification of physiological functions. It divided into type A (pharmacology/toxic) and type B (hypersensitivity). The reaction occured where there are antibodies and/or T cells that are active against the drug or one of the metabolites. Its mechanism including on-specific mast cells or histamine basophil release, accumulation of bradykinin, activated complement, changes in arachidonic metabolism, and pharmacological work of certain substances that cause bronchospasm. Acetylsalicylic acid and NSAIDs can cause actual allergic reactions and pseudoallergic reactions, including exacerbations of the underlying respiratory disease, urticaria, angioedema and anaphylaxis.

An effective strategy for drug risk management is to avoid or stop the use of suspected drugs. If at that time the patient use several kinds of drugs, all drugs should be stopped if possible. However, if not, it can be given only for the essential drugs and the drugs which may have the lowest risk for reaction or given other drugs which composed of different immunochemistry. Adjunctive therapy for hypersensitivity reactions are supportive and symptomatic. An effective way to prevent or reduce hypersensitivity reactions to drugs is to give drugs according to their indications. The problem of cross-reaction between drugs should be considered. Selective COX-2 inhibitors almost never cause a reaction, commonly safe for people allergic to acetylsalicylic acid and NSAIDs. The role of anti-allergic drugs such as antihistamines, corticosteroids, and sympathomimetics in the prevention of reactions is still limited.
Keywords: adverse drug reactions, drug allergy, management, prevention

The improvement of vaccines for elderly

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Abstract

In recent day, elderly population is increasing in number. Immunosenescene occurs during the old age, thus there is an increment in the risk of communicable diseases and mortality among elderly in the developing country. Vaccination has been a successful approach in preventing infectious disease to occur among infants and other populations. Notwithstanding, vaccination among geriatric population has a different approach compare to other populations. According to previous studies in regard of this issue, vaccines that are currently being used in elderly population have a significant difference in term of effectivity compare to their use in younger population. This happened due to various factors, including the fact that most of the vaccines were specifically design for children and young adult who have a different immune system than elderly, where older population experience Immunosenescene physiologically along with infection and previous vaccination history. Therefore, it is important to plan some specific vaccination strategies in order to adjust with elderly population both in formulation and protocol of vaccination that put elderly immunity system into consideration. Immune system in aging process can limit current vaccination efficacy, thus new vaccine formula is needed for elderly population. The most common approach that has been used to increase elderly immune response was by increasing antigen dose or using adjuvant. Nowadays, there is an evidence that shows the potency of senolitic or immunomodulator to improve vaccine response among elderly. Adjuvant has become one of the solutions, for instance the emulsion based adjuvant MF59 which is proven to have the ability of increasing antibody response after vaccination. Other emulsion based adjuvant (AS03) that is being used for influenza A vaccination is known to have the mechanism of increasing antigen uptake and presentation in lymph nodes. Senolitic can induce apoptosis among senescence cells without affecting the other healthy cells. Tyrosin kinase inhibitor such as Dasatinib and flavonoid Quercetin have shown the ability to eliminate adipocyte progenitors and senescence endothelial. The use of mTOR inhibitor is believed to increase vaccination response by changing cells metabolism and increasing IFN expression. In addition, the use of histamine receptor agonist such as Nizatidine can increase both humoral and cellular immune responses.
Keywords: *Geriatric, vaccination, adjuvant, senolitic, immunomodulator*

Challenges of influenza vaccination programs on the elderly

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Abstract

Influenza caused not only massive impact in decrease of productivity and economics loss, but the most important also increase mortality and morbidity especially in elderly. Vaccination in the most method to prevent infectious disease, include influenza. Decrease of immune system function in elderly causes decreased of vaccine immunogenicity. High incidence and mortality rate of influenza make influenza vaccination very effective. More study is needed to evaluate various approaches that used to increase vaccine immunogenicity, such as increasing the dose of antigen or the addition of adjuvant. Effectivity of influenza vaccine depends on suitability between the content of viral strain in the vaccine with the circulating strain. Influenza vaccine changes every year so the patient must be vaccinated once a year.
Keywords: vaccination program, influenza, elderly

Efficacy and Safety of Mycophenolate Mofetil as Treatment for Lupus Nephritis

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Abstract

Renal involvement in *systemic lupus erythematosus* (SLE) known as *lupus nephritis* (LN) reaches 60% of SLE patients. Lupus nephritis is strongly associated with high morbidity and mortality in SLE. Even with the use of anti inflammatory drugs and potent immunosuppressant therapy, ultimately chronic kidney disease (CKD) or end stage renal disease (ESRD) still occurs in most patients. The ability to identify SLE patients who experience a disease towards lupus nephritis accurately, will change the management of medication paradigm, from therapy towards prevention. Preventive strategies can significantly reduce the risk of CKD or ESRD. In the case of SLE patients who progress to lupus nephritis, it is necessary to monitor more closely, such as urine monitoring to renal biopsy so the treatment can begin before it's too late and in accordance with the histopathology. Immunosuppressant therapy in LN can reduce inflammation and ultimately prevent further renal damage. Early and

intensive therapy can improve renal outcomes. In the last 10 years the main choice of severe LN is high-dose intravenous cyclophosphamide (IVC) combined with corticosteroids, treatment with this regimen results in varying outcomes, both in remission induction and maintenance in proliferative LN. The use of high doses of IVC also causes high side effects that arise, so many studies are looking for immunosuppressants with lower toxicity as an alternative therapies. The research currently being done is mycophenolate mofetil (MMF). From the research showed that MMF is as effective as cyclophosphamide in achieving remission in lupus nephritis, but is safer, with a lower risk of ovarian failure. Mycophenolate mofetil is more effective than azathioprine in maintenance therapy for preventing relapse and with less leukopenia. Some side effects of MMF have been reported, in gastro intestinal tract (GIT), diarrhea often occurs. Toxicity to the ovaries makes this drug has limitations in its use in women of childbearing age.

Keywords: mycophenolat mofetil, lupus nephritis, treatment

MMF is the preferred antiprolifera- tive agent in induction treatment, and MMF in combination with low-dose corticosteroid presents an appropriate maintenance regimen for Chinese patients with severe proliferative lupus nephritis. Further long-term studies are required to doc- ument the treatment outcome in other patient populations.

Nutrition for Chronic Kidney Disease: Focus on Omega-3 Poly Unsutrated Fatty Acid

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Abstract

Malnutrition in CKD patients, may divided into: 1) type1which is due to uraemia assiciated with anorexia, underdialysis, dietary restrictions and psychosocial factors and 2) type 2 malnutrition which is characterized by hypoalbuminaemia, higher REE (resting energy expenditure), increased oxidative stress and increased protein catabolism. Malnutrition, inflammation, atherosclerotis or MIA syndrome is closely associated with type2 malnutrition. Chronic micro-inflammation may associated with anorexia and musclular wasting, and hypoalbuminaemia. During inflammation, IL-1 and TNF-α cause protein-energy malnutrition by inducing anorexia, reducing voluntary motor activity, decreasing muscle protein synthesis, and increasing muscle catabolism. Inflammation and accelerated atherosclerosis are closely associated via oxidative stress, which produce both endothelial dysfunction and atherogenesis. It was shown that hemodialysis patients has an increased of oxidative stress and associated with inflammation. Dyslipemia, oxidative stress, and inflammation, favor the atherosclerotic process. Nutritional therapy in CKD is aiming to improve nutritional status and reduce inflammation. In the long term is aiming to reduce cardiovascular mortality. Some studies has shown the benefits of omega-3 supllementation. The reduction of urinary MCP-1 excretion in the absence of MCP-1 serum concentration may suggest a beneficial effect of omega-3 supplementation on tubular MCP-1 production. Omega- 3 fatty acid supplementation can reduce TG, LDL-C and CRP, without significant changes TC, HDL, albumin, hemoglobin, homocysteine, DBP, glucose, lipoprotein(a), and ferritin in hemodialysis patients. Therefore omega-3 fatty acid supplementation is associated with lower several serum lipids and vascular inflammation markers in patients with ESRD.

Keywords: chronic kidney disease, inflammation, oxidative stress, omega-3 fatty acid, nitrition

Facts and hesitancies of sulfonylurea in clonical practice

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Abstract

More than a half of patients with type 2 diabetes mellitus (T2DM) will die from cardiovascular diseases (CVD); therefor the main purpose of its management is addressed to improve the CVD outcome. Both life style and medication are used to lower plasma glucose (PG) levels and reduce risk factors for CVD which frequently existed in T2DM, such as obesity, hypertension, and dyslipidemia. Since 2008, FDA implemented a regulation that all new antidiabetics should be studied on the safety for CV outcome (CVOT). CVOT with DPP4 inhibitors showed that the drugs non-inferiority (neutral) on CV outcome. Liraglutide and semaglutide, GLP-1 RAs, revealed CV outcome improvement. And SGLT2 inhibitors also showed improved CV outcome (CV death and hospitalization heart failure). Sulfonylurea (SU) is still word-widely used for patients with T2DM. Are SUs safe especially in term of CV outcome? Although several studies showed that SUs increased CV outcome, but several meta-analyses revealed that SUs neutral on CV outcome. New generation SUs (glimepiride and gliclazide XR) have less hypoglycemia side effect. In a new CVOT, comparing between glimepiride and linagliptin (CAROLINA trial, 2019) showed that no any difference of both antidiabetics on CV outcome. The finding ensured that glimepiride can be used for patients with T2DM without any hesitancy on worsening CV outcome. The latest ADA guideline still propose using SUs for second or third antidiabetics, especially when cost become major issue, and suggested using newer and lesser hypoglycemic side effect of SUs.

Overview chronic myeloid leukemia

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Abstract

Chronic myeloid leukemia (CML, chronic myelocytic or chronic myelogenous leukemia) is classified as a myeloproliferative disorder, along with polycythemia vera, essential thrombocytopenia and primary myelofibrosis. CML is a myeloproliferative neoplasm characterized by the dysregulatioed production

and uncontrolled proliferation of mature and maturing granulocytes with fairly normal differentiation. CML is defined by the presence of Philadelphia chromosome (Ph) in a patient with a myeloproliferative neoplasm (MPN). Ph results from a reciprocal translocation between chromosomes 9 and 22 [t(9;22] that gives rise to a BCR-ABL1 fusion gene; the product of this fusion gene is a protein with deregulated tyrosine kinase activity (p210) that plays a central role in the pathogenesis of CML. Patients with CML can present in one of three general phases: chronic phase, accelerated phase, or blastic crisis. Patient can progress from one to the other as their disease responds or does not respond to treatment. Treatment options for patients with CML are varied and include: potential cure with allogenic hematopoietic cell transplantation (HCT), disease control without cure using tyrosine kinase inhibitors (TKIs), or palliative therapy with cytotoxic agents. Factors influencing the choice of therapy include: the phase of CML; availability of donor for HCT; patient age; the presence of medical co-morbidities affecting patient suitability for HCT or particular TKIs; and, patients in earlier phases of CML, the response to treatment with TKIs.

Key words: CML, Philadelphia chromosome, clinical manifestation, treatment

Chronic myeloid leukemia Focus on role of tyrosine kinase inhibitors in "BPJS" era

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Abstract

Chronic myeloid leukemia (CML) is a clonal disorder of a pluripotent stem cell and is one of the malignancies associated with abnormal genes and characterized by the formation of the Philadelphia (Ph) chromosome which contains the oncogenic BCR-ABL fusion gene, the gene that encodes the BCR ABL fusion protein which is responsible for increasing proliferation, abnormal migration and reducing apoptosis. The BCR / ABL tyrosine kinase activity responsible for cell transformation is then used as the basis for tyrosine kinase (TKI) inhibitor therapy in CML. Targeted therapy with TKI introduced in the early 21st century has radically updated the concept and management of CML from fatal abnormalities to long-term manageable diseases. TKI improves the prognosis of CML patient s. Overall life expectancy (overall survival / OS) has increased dramatically since the advent of TKI therapy. Studies of The Anderson Cancer Center shows that OS 8 years from 15% before 1983 to 42% -65% in 1983-2000 and increased to 85% since 2001. The goal of therapy is to restore blood components to normal values, reduce and eliminate the Ph chromosome and BCR-ABL gene expression (8-10). Target therapy has developed from year to year. The first TKI approved by the FDA was Imatinib mesylate. This drug can be better tolerated and more effective than previous CML therapies. Most patients who get Imatinib therapy achieve cytogenetic responses and even molecular responses. Apart from the benefits of Imatinib, there are some disadvantages, especially the problem of resistance and intolerance. Second and third generat ion TKIs were developed to overcome these problems (nilotinib, dasatinin and ponatinib). Unfortunately, not all TKI agents available due to "BPJS" restrictions.

Keywords: CML, Tyrosine Kinase Inhibitors, " BPJS" era

Human Monkeypox: Present status and implication for the future

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Abstract

Monkeypox virus (MPXV) infection is an acute systemic epizootic viral infection. Formerly, this virus is known circulate among its primary host of wild animals and in less prevalence infect its incidental host of non-human primate in West and Central Africa's rain forests, until the end of smallpox eradication era and the first human MPX discovered. Since then the sporadic human MPX were reported from the epidemic regions, nowadays. 30 years after the cessation of global smallpox vaccination, the outbreaks show alarming escalating number of cases. Human MPX regarded as one of re-emerging infectious diseases, and the outbreak in USA, become the momentum of recognition of its potential global threat. Human MPX show almost similar clinical symptoms to smallpox, with lymphadenopathy as the prominent distinguishing characteristic. Although the mortality rate is in between that of variola minor and major, this infection causes more severe courses among the unvaccinated children. Loss of vision and skin scaring are the sequelae often found among the survivors. Management of human MPX consists of supportive treatment since no anti-viral and vaccination specifically for MPX available. Under study anti-viral drugs, smallpox vaccine and vaccinia immunoglobulin showed promising results during the 2003 USA human MPX outbreak. Global awareness is warranted to prevent future outbreak and the threat of human MPX spreads.

Keywords: Human Monkeypox, MPX, outbreaks, Smallpox

Adult vaccination in travelers

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Abstract

The number of international travelers annually is continuously growing. The incidence of infectious disease is very high among travelers, and common infectious diseases with risks to international travelers are currently real concern. Educating travelers about potential risk of infectious diseases acquired during travel and prevention strategies through appropriate pretravel vaccination is a key component for preventing infectious complications among travelers. The approach to vaccine recommendation should be based on the travel's destination, purpose and duration of travel, traveler's demographics, current knowledge of the epidemiology of vaccine preventable diseases, medical history, past vaccinations characteristics and the time available before trip departure. There are three categories of vaccinations for foreign travel.

The first category includes vaccinations which are routinely recommended whether or not the individual is traveling. Many travelers are due for primary vaccination or boosting against tetanus-diphtheria, measles-mumps-rubella, pneumococcal pneumonia, and influenza, for example, and the pre-travel visit is an ideal time to administer these. The second category are vaccinations which might be required by a country as a condition for entry, as for examples are vaccines for meningococcal, yellow fever and poliomyelitis. According to the International Health Regulations, many countries require these vaccinations and proof there of as the International Certificate of vaccination. The final category contains vaccinations which are recommended because there is a risk of acquiring a particular disease during travel. Recommended vaccinations often are more important for traveller's health than the required or routine ones. Typhoid fever, rabies, and hepatitis are some examples. Travelers who are pregnant or who are infected with the human immunodeficiency virus require special consideration. Physicians should be aware of the adverse events and contraindications associated with each travel vaccine.

Key words: Vaccine recommendation; Preventing illness; International traveler.

Food allergy: diagnostic approach, management and prevention

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Abstract

Food allergy is one of the clinical features of adverse food reactions (AFR) after consuming food or food additives. Pricipally the occurence of food allergies is caused by the failure of oral tolerancy mechanismwhich give the opportunity for the formation of excess food specific IgE antibodies which causes degranulation and release of histamine mediators. Histamine will induce vasodilation, smooth muscle contraction, mucous secretion. In addition, the binding process of specific antibodies to the surface tissue antigen or hapten cell associated which will induces complement activation. Complement activation will affect the production of various inflammatory mediators which cause tissue damage. Food allergy can manifest in several organs, in some cases it can manifest systemically and cause lethal reactions such as anaphylactic reactions, but can also cause local reactionin skin, gastrointestinal system and respiration. food allergy can be clinically diagnosed, skin prick examination and oral food challenge can also be used as supporting diagnosis. Specific therapies for food allergies do not available at this time, therapies aimed at reducing symptoms and preventing allergens.