Hepatitis B Cure The Effective Guide And Healthy Recipes To Help You Cure Hepatitis B Functionally

Hepatitis B Cure-Vincent Brown Rnd 2020-09-07 Hepatitis B is a potentially life-threatening liver infection caused by the hepatitis B virus (HBV).It is a major global health problem. It can cause chronic infection and puts people at high risk of death from cirrhosis and liver cancer. A safe and effective vaccine that offers a 98-100% protection against hepatitis B is available.Preventing hepatitis B infection averts the development of complications including the development of chronic disease and liver cancer.Hepatitis B prevalence is highest in the WHO Western Pacific Region and the WHO African Region, where 6.2% and 6.1% of the adult population is infected respectively. In the WHO Eastern Mediterranean Region, the WHO South-East Asia Region and the WHO European Region, an estimated 3.3%, 2.0% and 1.6% of the general population is infected, respectively. And in the WHO Region of the Americas, 0.7% of the population is infected. In highly endemic areas, hepatitis B is most commonly spread from mother to child at birth (perinatal transmission), or through horizontal transmission (exposure to infected blood), especially from an infected child to an uninfected child during the first 5 years of life. The development of chronic infection is very common in infants infected from their mothers or before the age of 5 years.

Hepatitis B Virus, An Issue of Clinics in Liver Disease-Tarek I. Hassanein 2019-07-06 In collaboration with Consulting Editor, Dr. Norman Gitlin, Dr. Tarek Hassanein has assembled top experts in hepatology to bring current information on the topic of Hepatitis B Virus. The issue provides the most current information on the prevention and care of infected patients. Specific articles are devoted to the following topics: Global perspective on HBV infections in the era of effective vaccines; Understanding the natural history of HBV infection and the new definitions of cure and the endpoints of clinical trials; HBV/HCV coinfection in the era of HCV-DAAs; Antiretroviral effects on HBV/HIV coinfection and the natural history of liver disease; Impact of HBV infection on HCC and liver transplantation; HBV in pregnant women and their infants; WHO guidelines for prevention, care and treatment of individuals infected with HBV: A US perspective; Reconciling the difference between the major HBV treatment guidelines: AASLD, EASL, APASL; HBV/HDV coinfection: A challenge for therapeutics; and The effects of hepatic steatosis on the natural history of HBV infection. Readers will come away with the current information they need to manage patient outcomes.

Eliminating the Public Health Problem of Hepatitis B and C in the United States-National Academies of Sciences, Engineering, and Medicine 2016-07-01 Hepatitis B and C cause most cases of hepatitis in the United States and the world. The two diseases account for about a million deaths a year and 78 percent of world's hepatocellular carcinoma and more than half of all fatal cirrhosis. In 2013 viral hepatitis, of which hepatitis B virus (HBV) and hepatitis C virus (HCV) are the most common types, surpassed HIV and AIDS to become the seventh leading cause of death worldwide. The world now has the tools to prevent hepatitis B and cure hepatitis C. Perfect vaccination could eradicate HBV, but it would take two generations at least. In the meantime, there is no cure for the millions of people already infected. Conversely, there is no vaccine for HCV, but new direct-acting antivirals can cure 95 percent of chronic infections, though these drugs are unlikely to reach all chronically-infected people anytime soon. This report, the first of two, examines the feasibility of hepatitis B and C elimination in the United States and identifies critical success factors. The phase two report will outline a strategy for meeting the elimination goals discussed in this report.

Hepatitis and Liver Cancer-Institute of Medicine 2010-05-23 The global epidemic of hepatitis B and C is a serious public health problem. Hepatitis B and C are the major causes of chronic liver disease and liver cancer in the world. In the next 10 years, 150,000 people in the United States will die from liver disease or liver cancer associated with chronic hepatitis B virus (HBV) or hepatitis C virus (HCV) infections. Today, between 800,000 and 1.4 million people in the United States have chronic hepatitis B and between 2.7 and 3.9 million have chronic hepatitis C. People most at risk for hepatitis B and C often are the least likely to have access to medical services. Reducing the rates of illness and death associated with these diseases will require greater awareness and knowledge among health care workers, improved identification of at-risk people, and improved access to medical care. Hepatitis B is a vaccine-preventable disease. Although federal public health officials recommend that all newborns, children, and at-risk adults receive the vaccine, about 46,000 new acute cases of the HBV infection emerge each year, including 1,000 in infants who acquire the infection during birth from their HBV-positive mothers. Unfortunately, there is no vaccine for hepatitis C, which is transmitted by direct exposure to infectious blood. Hepatitis and Liver Cancer identifies missed opportunities related to the prevention and control of HBV and HCV infections. The book presents ways to reduce the numbers of new HBV and HCV infections and the morbidity and mortality related to chronic viral hepatitis. It identifies priorities for research, policy, and action geared toward federal, state, and local public health officials, stakeholder, and advocacy groups and professional organizations.

Hepatitis B Virus and Liver Disease-Jia-Horng Kao

Cost-effectiveness Analysis of Lamivudine Treatment in Chronic Hepatitis B-Yu-Chen Yeh 2000

A National Strategy for the Elimination of Hepatitis B and C-National Academies of Sciences, Engineering, and Medicine 2017-07-30 Hepatitis B and C cause most cases of hepatitis in the United States and the world. The two diseases account for about a million deaths a year and 78 percent of world's hepatocellular carcinoma and more than half of all fatal cirrhosis. In 2013 viral hepatitis, of which hepatitis B virus (HBV) and hepatitis C virus (HCV) are the most common types, surpassed HIV and AIDS to become the seventh leading cause of death worldwide. The world now has the tools to prevent hepatitis B and cure hepatitis C. Perfect vaccination could eradicate HBV, but it would take two generations at least. In the meantime, there is no cure for the millions of people already infected. Conversely, there is no vaccine for HCV, but new direct-acting antivirals can cure 95 percent of chronic infections, though these drugs are unlikely to reach all chronically-infected people anytime soon. This report, the second of two, builds off the conclusions of the first report and outlines a strategy for hepatitis reduction over time and specific actions to achieve them.

Global Hepatitis B Prevention and Treatment- 2010 Hepatitis B (HBV) is a vaccine-preventable viral disease that, if untreated, can lead to death from liver disease in 25 percent of patients. Infection with HBV is a major global public health problem, particularly in Asian populations. In an era of limited healthcare budgets, mathematical models can be useful tools to identify cost-effective programs and to support policymakers in making informed decisions. This dissertation describes research on public health policies related to screening, vaccination, and treatment for HBV. It also describe contributions to the theoretical literature on when to stop catch-up vaccination for chronic infectious diseases. In the United States as many as 10% of Asian and Pacific Islander adults are chronically infected with HBV, and up to two thirds are unaware that they are infected. Using Markov models of infection, treatment and disease, I find that screening programs for HBV among Asian and Pacific Islander adults are likely to be cost effective and have clinically significant benefits from identifying chronically infected persons for medical management. Liver disease associated with childhood-acquired HBV is a leading cause of death among adults in China. Approximately 20% of children under age 5 years and 40% of children aged 5 to 19 years remain unprotected from HBV. Using a Markov model of infection and disease progression I find that HBV catch-up vaccination for children and adolescents in China would improve the health of the population and save costs over the long term. Although the 20th century has seen incredible development of safe and effective vaccines, many people remain susceptible to vaccine-preventable diseases. "Catch-up vaccination" for age groups beyond infancy can be an attractive and effective means of immunizing people who were missed earlier. However, as vaccination rates increase, catch-up vaccination may become less attractive. This chapter addresses the question of when to discontinue catch-up vaccination programs as immunization rates increase. I use a cost-effectiveness framework: I consider the cost per quality-adjusted life year gained of catch-up vaccination efforts, as a function of immunization rates over time and consequent disease prevalence and incidence. I illustrate the results with the example of HBV catch-up vaccination in China. I contrast results from a dynamic modeling approach with an approach that ignores the impact of vaccination on disease incidence.

Management of Chronic Hepatitis B-U. S. Department of Health and Human Services 2013-05-31 Hepatitis B is a highly prevalent disease with 350 million chronic cases worldwide and more than 4,000 incident cases in the U.S. in 2006. An estimated 2,000 to 4,000 deaths per year are related to Chronic Hepatitis B (CHB) liver diseases. The natural history of CHB is variable but generally indolent for many years to decades. Only 5% of acutely infected immunocompetent adults develop CHB. Demographic, clinical, and hepatitis B disease factors are believed associated with the development of CHB and poorer prognosis among those who develop CHB. Treatment goals include prevention of cirrhosis, hepatocellular cancer, and liver failure. Suppressing replication of hepatitis B virus (HBV) is believed a key process to achieving this goal. Hepatitis B treatments include nucleos(t)ide analogues that suppress viral replication and interferons, naturally occurring cytokines with antiviral and immunomodulatory properties. Six agents used as monotherapy or in combination have been approved, as of June 2008, for use in the U.S. A seventh, tenovir, was approved in August 2008. Two basic therapeutic approaches exist. A defined self-limited course (e.g., 4-12 months) followed by monitoring off treatment is generally used with interferon-based therapy. Long-term continuous suppressive therapy is used for other direct antiviral agents. Researchers have proposed clinical outcomes and biochemical, virologic, and histologic measures to determine an individual's risk for disease progression, identify candidates for treatment, and assess treatment effectiveness and harms. The Minnesota Evidence-based Practice Center (EPC) conducted a review to address the following questions for a National Institutes of Health (NIH) Consensus Conference related to Management of Chronic Hepatitis B in Adults. Consensus conference question 1. What is the natural history of Hepatitis B? EPC question 1. What is the evidence that the following population characteristics or clinical features associated with hepatitis B are predictive of hepatocellular carcinoma, liver failure, cirrhosis, liver-related death, and all-cause mortality? Consensus conference question 2. What are the benefits and risks of the current therapeutic options for hepatitis B with defined or continuous courses of treatment? EPC question 2a. What is the efficacy (or effectiveness) of interferon therapy, oral therapy, and various combinations in treating hepatitis B with defined or continuous courses of treatment? EPC question 2b. What are the known harms of interferon therapy, oral therapy, and various combinations in treating hepatitis B with defined or continuous courses of treatment? Surrogate outcomes of interest. Alanine aminotransferase (ALT) and/or aspartate aminotransferase (AST) levels, HBV viral load, change in Hepatitis B e antigen (HBeAg) status, hepatitis B surface antigen (HBsAg) conversion, liver biopsy findings (necroinflammatory activity or stage of fibrosis), and drug resistance. Clinical outcomes of interest include hepatocellular carcinoma, liver failure, cirrhosis, liver related death, all-cause mortality. Consensus conference question 3. Which persons with hepatitis B should be treated? EPC question 3a. Are there differences in efficacy/effectiveness of treatments for treatment naïve versus drug-resistant patients, chronic HBeAg-positive versus HBeAg-negative patients, or for other subpopulations? EPC question 3b. Is there

evidence that specific subpopulations do not require treatment for hepatitis B? Consensus conference question 4. What measures are appropriate to monitor therapy and assess outcomes? EPC question 4. What is the evidence that changes in surrogate endpoints in response to treatment are reliable predictors of long-term resolution or slowed progression of disease? Patient Population: Adults (18 years of age or older), including elderly and members of racial/ethnic minority populations.

Hepatitis B Cure Book Guide-Theo Williams, MD 2021-05-09 Hepatitis B is a potentially life-threatening liver infection caused by the hepatitis B virus (HBV). It is a major global health problem. It can cause chronic infection and puts people at high risk of death from cirrhosis and liver cancer. A safe and effective vaccine that offers a 98-100% protection against hepatitis B is available. Preventing hepatitis B infection averts the development of complications including the development of chronic disease and liver cancer. Geographical distribution Hepatitis B prevalence is highest in the WHO Western Pacific Region and the WHO African Region, where 6.2% and 6.1% of the adult population is infected respectively. In the WHO Eastern Mediterranean Region, the WHO South-East Asia Region and the WHO European Region, an estimated 3.3%, 2.0% and 1.6% of the general population is infected, respectively. And in the WHO Region of the Americas, 0.7% of the population is infected. Hepatitis B is transmitted through contact with infectious body fluids, such as blood, vaginal secretions, or semen, containing the hepatitis B virus (HBV). Injection drug use, having sex with an infected partner, or sharing razors with an infected person increase your risk of getting hepatitis B. It's estimated by the CDC that 1.2 million people in the United States and 350 million people worldwide live with this chronic disease.

Herbal Antivirals for Hepatitis B-Chidubem Okwuo 2021-04-03 This book contains the most potent and scientifically proven medicinal herbs in the treatment of HEPATITIS B. Every herbs has its origin, traditional usage, the parts used, the scientific evidence of its effects as well as the preparations and dosage. It is a good start in fighting this chronic disease.Functional cure has been what the scientific and medical world are seeking to achieve using synthetic drugs which up till now has never been realized. The same functional cure is what these herbs have been achieving in the lives of people who are infected with hepatitis b. The author tries to elaborate on the effectiveness and dosage of the single herb and also advises that the herbs can be combined to give faster result

Hepatitis B (Chronic)- 2013 Chronic hepatitis B describes a spectrum of disease usually characterised by the presence of detectable hepatitis B surface antigen (HBsAg) in the blood or serum for longer than 6 months. In some people, chronic hepatitis B is inactive and does not present significant health problems, but others may progress to liver fibrosis, cirrhosis and hepatocellular carcinoma (HCC). The progression of liver disease is associated with hepatitis B virus (HBV) DNA levels in the blood. Without antiviral treatment, the 5-year cumulative incidence of cirrhosis ranges from 8 to 20%. People with cirrhosis face a significant risk of decompensated liver disease if they remain untreated. Five-year survival rates among people with untreated decompensated cirrhosis can be as low as 15%. Chronic hepatitis B can be divided into e antigen- (HBeAg) positive or HBeAg-negative disease based on the presence or absence of e antigen. The presence of HBeAg is typically associated with higher rates of viral replication and therefore increased infectivity. The goal of treatment for chronic hepatitis B is to prevent cirrhosis, HCC and liver failure. In clinical practice surrogate markers are used to monitor progression of disease and treatment response, and include normalisation of serum alanine aminotransferase (ALT) levels, decrease in inflammation scores with no worsening or improvement in fibrosis on liver biopsies, suppression of serum HBV DNA to undetectable levels, loss of HBeAg and seroconversion to HBe antibody (anti-HBe), and loss of HBsAg and seroconversion to HBs antibody (anti-HBs). Antiviral therapy suppresses HBV replication and decreases hepatic inflammation and fibrosis, thereby reducing the likelihood of serious clinical disease. Since the introduction of effective treatment in the form of interferon alfa, several nucleoside and nucleotide analogues are now approved for use in adults with chronic hepatitis B, together with a pegylated form of interferon alfa. With multiple treatment options that are efficacious and safe, the key questions are which patients need immediate treatment and what sequence and combination of drug regimens should be used, and which patients can be monitored and delay treatment. In this guideline we cover the following: information needs of people with chronic hepatitis B and their carers; where children, young people and adults with chronic hepatitis B should be assessed; assessment of liver disease, including the use of non-invasive tests and genotype testing; criteria for offering antiviral treatment; the efficacy, safety and cost effectiveness of currently available treatments; selection of first-line therapy; management of treatment failure or drug resistance; whether there is a role for combination therapy; when it is possible to stop treatment; managing the care of pregnant and breastfeeding women and prevention of vertical transmission; prophylactic treatment during immunosuppressive therapy; and monitoring for treatment response, severity of fibrosis and development of HCC.

Screening for Hepatitis B Virus Infection in Nonpregnant Adolescents and Adults: Systematic Review to Update the 2004 U.s. Preventive Services Task Force Recommendation-U.s. Department of Health and Human Services 2014-06-18 This report was commissioned by the U.S. Preventive Services Task Force (USPSTF) in order to update its 2004 recommendation on screening for hepatitis B virus (HBV) infection in nonpregnant adolescents and adults. In 2004, the USPSTF recommended against screening asymptomatic persons in the general population for chronic HBV infection, based on a lack of evidence showing that screening improves morbidity or mortality associated with HBV infection; that the prevalence of HBV infection is low in the general population; and that the majority of infected individuals do not develop chronic infection, cirrhosis, or other HBV-related liver disease. The USPSTF noted the poor predictive value of screening strategies for identifying persons at high risk for infection and limited evidence on the effectiveness of treatment interventions. The USPSTF also pointed out that routine vaccination has reduced the number of new HBV infections, particularly for children and adolescents, decreasing the burden of chronic HBV infection. HBV is a double-stranded DNA virus enclosed in a nucleocapsid protein (core antigen) surrounded by an envelope protein (surface antigen, or sAg). Serologic markers are usually the initial tests used to determine HBV infection status; subsequent tests in persons with markers indicating

active infection are performed to determine the presence and level of circulating HBV DNA. Acute HBV infection (within 6 months after infection) is typically characterized by the initial appearance of HBV surface antigen (HBsAg) without other serologic markers, followed by the appearance of immunoglobin M (IgM) antibody to the HBV core antigen (anti-HBc). Chronic infection is characterized by the persistent presence of HBsAg for longer than 6 months; HBV DNA levels can fluctuate and are not a reliable marker of chronic infection. The presence of HBV e antigen (HBeAg) is usually associated with high levels of HBV DNA in serum and high infectivity. Resolution of HBV infection and immunity are typically characterized by disappearance of HBsAg and appearance of antibody to HBV surface antigen (anti-HBs) as well as anti-HBc. Although disappearance of HBeAg and appearance of antibody to HBeAg (anti-HBe) eventually occurs in most patients with chronic HBV infection, typically correlating with low levels of HBV DNA in serum and remission of liver disease, patients (primarily from southern Europe or Asia) who are HBeAg negative due to mutations that prevent HBeAg expression can have persistent active disease. Key Questions are—1. What are the benefits of screening for HBV versus no screening in asymptomatic, nonpregnant adolescents and adults on morbidity, mortality, and disease transmission? 2. What are the harms of screening for HBV infection (e.g., labeling, anxiety, and harms of confirmatory tests, including biopsy)? 3. How well do different screening strategies identify individuals with HBV infection (e.g., strategies that target persons from high-prevalence countries, men who have sex with men, injection drug users, immunization history, or other risk factors)? 4. In nonpregnant adolescents and adults with no evidence of HBV immunity on screening, how effective is HBV vaccination for improving clinical outcomes? 5. In nonpregnant adolescents and adults with chronic HBV infection, how effective is antiviral treatment at improving intermediate outcomes (virological or histological improvement or clearance of HBeAg)? 6. In nonpregnant adolescents and adults with chronic HBV infection, how effective is antiviral treatment at improving health outcomes? 7. In nonpregnant adolescents and adults with chronic HBV infection, how effective is education or behavior change counseling in reducing transmission and improving health outcomes? 8. What are the harms associated with antiviral treatment for HBV infection? 9. Do improvements in intermediate outcomes improve final health outcomes?

Hepatitis B Research Advances-Alicia P. Willis 2007 Hepatitis B is a disease of the liver caused by the Hepatitis B virus (HBV), a member of the Hepadnavirus family and one of several unrelated viral species which cause viral hepatitis. It was originally known as serum hepatitis and has caused epidemics in parts of Asia and Africa. This book presents the advances in the field.

Hepatitis B and C- 2020-04-08 This book on Hepatitis B and C contains very useful and recent information about the general characteristics of these common types of chronic liver infections. Referred to as Hepatitis B, there are three chapters describing the main epidemiological, clinical, therapeutic, and prognosis aspects. The molecular variants for HBsAg, its genotyping, and their clinical implications are fully analyzed. The implications of coinfection Hepatitis B and C in HIV patients and their treatment are described. In relation to Hepatitis C, there are three chapters describing the general characteristics of this chronic viral infection. The challenges and strategies for access to treatment of Hepatitis C in Latin America are fully covered and these can be applied in other countries with similar epidemiological and financial problems for access to treatment on a large scale. The role of direct-acting antivirals (DAA) in the treatment of chronic Hepatitis C infection with liver cirrhosis is clearly documented.

Health and Economic Impact of Treatment-based Strategies on Chronic Hepatitis B in Ontario-Feng Tian 2019 Background/Aim: The lives of about 257 million people in the world are being affected by chronic hepatitis B (CHB), and this contagious disease is gradually pushing them closer to the edge of death caused by cirrhosis and hepatocellular carcinoma. Ontario is closely connected to the rest of the world; more than 40% of the annual population growth over the past decade has come from immigrants. Addressing hepatitis B and achieving the World Health Organization (WHO)'s hepatitis elimination goals are vital. Tenofovir alafenamide (TAF) has been approved for treating CHB due to a proposed better safety profile in comparison to current therapies. However, its cost-effectiveness remains unknown. The aim of this thesis was to assess the health and economic impact of TAF and other treatments of CHB in Ontario. Methods: Two types of health policy models were employed to compare strategies involving entecavir (ETV), tenofovir disoproxil fumarate (TDF), and TAF. 1) A state-transition model (STM) based on the natural history of CHB and the published literature was developed to evaluate the cost-effectiveness of the treatment strategies for hepatitis B envelope antigen (HBeAg)-positive and HBeAg-negative CHB patients from an Ontario Ministry of Health perspective. It adopted a lifetime time horizon, and outcomes measured were predicted number of liver-related disease and deaths, costs (2018 Canadian dollars), quality-adjusted life years (QALYs), and incremental cost-effectiveness ratios (ICERs). 2) An agent-based model (ABM) that accommodates differential selectivity, behavior, and network properties was developed to predict the impact of the treatment-as-prevention options on the incidence and prevalence of hepatitis B virus (HBV)-related health outcomes in Ontario over the next decade. We simulated the entire Ontario population, stratified by age, gender, residential address, and immigration status. Parameters were estimated from literature-derived estimates regarding Ontario demographics, epidemiology, and sexual behavior. Historical Ontario HBV data were used for calibration. Results: 1) The STM found that TAF-containing strategies are unlikely to be a rational choice for treating CHB infections. For HBeAg-positive patients, TAF followed by ETV generated an additional 0.16 QALYs/person at an additional cost of $14,836.18 with an ICER of $94,142.71/QALY compared with TDF followed by ETV. Only 28.7% of the iterations showed that it is the optimal strategy with $50,000 willingness-to-pay threshold. For HBeAg-negative patients, ETV followed by TAF would prevent an additional 13 liver-related deaths per 1,000 CHB patients treated compared with TDF followed by ETV. It generated an additional 0.13 QALYs/person at an additional cost of $59,776.53 with an ICER of $461,162.21/QALY compared with TDF followed by ETV. 2) We calibrated the ABM-simulated number of reported acute hepatitis B (AHB) infections with the historical reported cases in Ontario. After extensive calibration and validation processes, our model showed a good match with the real-world observations. The ABM predicted that the actual prevalence of CHB in Ontario would decrease by 11.5% from 2017 to 2030 if all CHB patients eligible and ready for treatment begin to receive TDF followed by ETV or TAF followed by ETV after 2016. The reported incidence of AHB and the actual incidence of liver-related death are expected to fall by 48.9% and rise by 12.3% from 2017 to 2030, respectively. TAF followed by ETV was not found to be significantly different from TDF followed by

ETV in reducing the prevalence and incidence of HBV-related health outcomes. Conclusions: TAF is not cost-effective at its current cost. A 33.4% reduction in price would be required to make it cost-effective for HBeAg-positive patients with a $50,000 willingness-to-pay threshold. The percentages of decline in new CHB cases and liver-related deaths from 2017 to 2030 would be 37.8% and 77.3% lower than the percentages that the WHO is targeting, respectively. Ontario is unable to achieve the WHO's goals of eliminating new CHB cases and CHB deaths simply by relying on current treatment-as-prevention strategies.

Recurrent Hepatitis B After Liver Transplantation and the Association with Hepatocellular Carcinoma-Ka-Yee Cindy Cheung 2017-01-27 This dissertation, "Recurrent Hepatitis B After Liver Transplantation and the Association With Hepatocellular Carcinoma" by Ka-yee, Cindy, Cheung, □□□, was obtained from The University of Hong Kong (Pokfulam, Hong Kong) and is being sold pursuant to Creative Commons: Attribution 3.0 Hong Kong License. The content of this dissertation has not been altered in any way. We have altered the formatting in order to facilitate the ease of printing and reading of the dissertation. All rights not granted by the above license are retained by the author. Abstract: Liver transplantation (LT) is the most effective treatment for hepatitis B virus (HBV) related liver failure and hepatocellular carcinoma (HCC). Nevertheless, HBV and HCC recurrence rate remains high after LT. Previous studies have shown that HBV reactivation is associated with HCC recurrence and poor prognosis after LT. The main objectives of this study are to investigate the risk factors for HBV and HCC recurrence after LT, the efficacy of antiviral drugs to prevent HBV reactivation and the underlying mechanisms contributing to HBV reactivation. Firstly, we investigate the risk factor for HBV and HCC recurrence in 551 HBsAg seropositive LT patients, of whom374 had no tumor and 177 had HCC. All patients received indefinite antiviral treatment after LT. The study showed that pre-LT HBV DNA levels and HCC recurrence were significantly associated with HBV reactivation after LT. Younger age, lower Child-Pugh score, beyond UCSF criteria, higher AST level, salvage LT, older donor, HBsAg seropositive at the last follow-up and HBV reactivation after LT were independent risk factors for HCC recurrence. HCC recurrence alone accounts for poor overall survival. The sequence analysis identified drug-resistant mutants as the main contributors to HBV reactivation. In addition, wild-type (antiviral drug-sensitive) HBV reactivation was identified in patients with HCC recurrence. Secondly, we investigate the efficacy of antiviral drugs monotherapy (Lamivudine or Entecavir) in preventing HBV reactivation. This study showed that patients receiving lamivudine (LAM) experienced significantly greater HBV reactivation and HCC recurrence than those receiving entecavir (ETV). In patients with no tumors, HBV reactivation was found in the LAM groups but not in the ETV groups, due to the appearance of a LAM drug-resistant mutant. In patients with HCC recurrence, HBV reactivation was found in both treatment groups. Wild-type HBV reactivation was identified in 17% (5/29) and 100% (1/1) of HCC patients receiving LAM and ETV respectively. This suggests that, although ETV had higher genetic barriers to HBV drug resistance; it still cannot prevent wild-type HBV reactivation in HCC-recurrent patients. Thirdly, we investigate the expression of HBV markers in HCC and adjacent non-tumor tissues. Origin of circulating HBV was identified using genetic distance analysis of HBV isolated from different compartments (i.e. HCC and adjacent non-tumor tissues). The study showed that, in some HCC cases, the expressions of HBsAg and HBV replicative efficiency are higher in HCC tissues than in adjacent non-tumor tissues. Moreover, through genetic distance analysis, we demonstrated that HBV reactivation could originate from recurrent HCC. These data suggest that HCC supports HBV replication and that HBV is secreted from recurrent HCC. Finally, we demonstrate that the up-regulation of drug-specific ABC-transporters is significantly associated with patients with HCC recurrence. In vitro studies also showed that the up-regulation of ABCG2 contributes to antiviral drug-resistant. Finally, we demonstrate that the up-regulation of drug-specific ABC-transporters is significantly associated with patients with HCC recurrence. In vitro studies also showed that the up-regulation of ABCG2 contributes to antiviral drug-resistant. Subjects: Liver - Cancer Hepatitis B Liver

Challenging Issues in the Management of Chronic Hepatitis B Virus, An Issue of Clinics in Liver Disease, E-Book-Mitchell L Shiffman 2021-09-29 In this issue of Clinics in Liver Disease, guest editor Mitchell L Shiffman brings considerable expertise to the topic of Challenging Issues in the Management of Chronic Hepatitis B Virus. Provides in-depth, clinical reviews on the latest updates in Challenging Issues in the Management of Chronic Hepatitis B Virus, providing actionable insights for clinical practice. Presents the latest information on this timely, focused topic under the leadership of experienced editors in the field; Authors synthesize and distill the latest research and practice guidelines to create these timely topic-based reviews.

Hepatitis B and D Protocols-Robert K. Hamatake 2004-01-28 Despite the availability of an effective vaccine, there are still 400 million people, worldwide who are chronically infected with hepatitis B virus (HBV). For them, the vaccine, as currently applied, has no value. Given the possible consequences of HBV infection, the number of those chronically infected with HBV presents an enormous public health challenge. For example, the major etiology of hepatocellular carcinoma (HCC) is chronic infection with HBV. Although fifth in cancer incidence, worldwide, HCC/liver cancer is the third leading cause of cancer death. The high mortality as- ciated with HCC arises because the disease is often detected late and is unresponsive to treatment. The number of deaths caused by PHCC is expected to rise over the next 20 years. Those chronically infected with HBV have a life risk of death to HCC of between 10 and 25%. Even the limited efficacy of drugs for the treatment of chronic HBV helps underscore the point that this disease is responsive to therapy. Drugs that target the polymerase (e. g. , hepsera and lamivudine) and interferon alpha represent two distinct strategies and show that both conventional antiviral and immunothe- peutic approaches can be used in management. However, the current inventory of therapeutics is inadequate. Interferon alpha is of limited value, only parenterally ava- able, and fraught with adverse reactions.

Hepatitis Diet Book Guide-Scott Wilson, MD 2020-11-13 Hepatitis is inflammation of the liver. There are several types of hepatitis. The disease has several causes. One cause of hepatitis is infection. Most cases of infectious hepatitis in the United States are caused by hepatitis A, B or C virus. An infection with one of these viruses might not cause any symptoms. Or it might cause only a mild, flu-

like illness. Hepatitis A is usually a mild short-term illness. But hepatitis B and C often cause long-term (chronic) infections. The goal of a hepatitis diet is to minimize stress on your liver, which is already compromised by the inflammation that defines the condition. Perhaps surprisingly, an ideal eating plan for chronic hepatitis is simply one that aligns with healthy eating guidelines for all adults provided by the U.S. Department of Agriculture (USDA). A nutritious diet can help you maintain an optimal weight and may help you to preserve healthy liver function. While you may need to adjust your diet based on your specific diagnosis, the guiding principles of basic nutrition are likely to give your body what it needs without further taxing your liver.

Hepatitis B: The Virus, the Disease and the Vaccine-Irving Millman 1984-08 Toby K. Eisenstein Symposium Committee Chairperson Temple University School of Medicine Philadelphia, Pennsylvania 19140 This symposium is the thirteenth biennial clinical microbiology program sponsored by the Eastern Pennsylvania Branch of the American Society for Microbiology in cooperation with the Philadelphia area medical schools and the Bureau of Laboratories of the Pennsylvania Department of Health. This year a generous contribution from Merck, Sharp and Dohme has helped to make the program a reality. The subject matter for this symposium represents an attractive spectrum of medical, biological and molecular approaches to the practical solution of a public health prob1em--name1y, prevention of infection with the hepatitis B virus. The symposium may be unique in that it focuses on a product which was first marketed less than three months ago, but included in the program are presen tations on two new approaches to hepatitis B vaccine production which may replace the one which is newly unveiled. The rapidity of progress in our present era of biological research is indeed astonishing.

Prevention of mother-to-child transmission of hepatitis B virus (HBV)- 2020-05-11 WHO estimates that in 2015, 257 million people were living with chronic hepatitis B virus (HBV) infection worldwide, and that 900 000 had died from HBV infection, mostly as a result of cirrhosis or hepatocellular carcinoma. Most HBV-associated deaths among adults are secondary to infections acquired at birth or in the first five years of life. In May 2016, the World Health Assembly endorsed the Global health sector strategy on viral hepatitis, which calls for the elimination of viral hepatitis as a public health threat by 2030 (defined as a 90% reduction in incidence of new infections and a 65% reduction in mortality). Elimination of HBV infection as a public health threat requires a reduction in the prevalence of hepatitis B surface antigen (HBsAg) to below 0.1% in children 5 years of age. This can be achieved through universal immunization of newborns against hepatitis B and other interventions to prevent mother-to-child transmission of HBV. These guidelines provide evidence-based guidance on the use of peripartum antiviral prophylaxis in HBsAg-positive pregnant women for the prevention of mother-to-child transmission of HBV.

Hepatitis B and D Protocols-Robert K. Hamatake 2004-01-28 Despite the availability of an effective vaccine, there are still 400 million people, worldwide who are chronically infected with hepatitis B virus (HBV). For them, the vaccine, as currently applied, has no value. Given the possible consequences of HBV infection, the number of those chronically infected with HBV presents an enormous public health challenge. For example, the major etiology of hepatocellular carcinoma (HCC) is chronic infection with HBV. Although fifth in cancer incidence, worldwide, HCC/liver cancer is the third leading cause of cancer death. The high mortality as- ciated with HCC arises because the disease is often detected late and is unresponsive to treatment. The number of deaths caused by PHCC is expected to rise over the next 20 years. Those chronically infected with HBV have a life risk of death to HCC of between 10 and 25%. Even the limited efficacy of drugs for the treatment of chronic HBV helps underscore the point that this disease is responsive to therapy. Drugs that target the polymerase (e. g. , hepsera and lamivudine) and interferon alpha represent two distinct strategies and show that both conventional antiviral and immunothe- peutic approaches can be used in management. However, the current inventory of therapeutics is inadequate. Interferon alpha is of limited value, only parenterally ava- able, and fraught with adverse reactions.

Novel Therapeutic Strategies for Chronic HBV Infection: An Immunological Perspective-Seung Kew Yoon 2020-08-14 Chronic hepatitis B (CHB) is a life-threatening liver disease affecting 257 million people worldwide, in particular in the Asia-Pacific regions. In endemic areas, hepatitis B virus (HBV) is usually transmitted from chronically infected mothers to neonates. Perinatal HBV infection causes chronic infection in more than 90% of exposed individuals. With perinatal infection, lifetime mortality risk due to complications of liver cirrhosis (LC) or hepatocellular carcinoma (HCC) reaches up to 40% in men and 15% in women. For the treatment of chronic HBV infection, nucleos(t)ide analogue antivirals have been successfully used to suppress viral replication. However, HBV exists as a cccDNA, which cannot be eliminated by nucleos(t)ide analogues. Therefore, a practical goal of novel HBV therapeutics can be HBs seroconversion (loss of HBsAg and development of HBsAg-specific antibodies), which occurs during spontaneous recovery from acute HBV infection. This HBs seroconversion is referred to as “functional cure” of HBV infection. When functional cure is reached, HBsAg-specific antibodies have virus-neutralizing activity and control HBV infection even in the presence of cccDNA. Currently, peg-IFN-a is often used to induce HBs seroconversion in patients with chronic HBV infection; however, the efficacy is not satisfactory. In future, other immunological therapeutics must be considered to achieve HBs seroconversion, including therapeutic vaccines and immune checkpoint blockers.

Recommendations for Protection Against Viral Hepatitis- 1985

Hepatitis B and D Protocols-Robert K. Hamatake 2010-11-09 Despite the availability of an effective vaccine, there are still 400 million people, worldwide who are chronically infected with hepatitis B virus (HBV). For them, the vaccine, as currently applied, has no value. Given the possible consequences of HBV infection, the number of those chronically infected with HBV presents an enormous public health challenge. For example, the major etiology of hepatocellular carcinoma (HCC) is chronic infection with HBV. Although fifth in cancer incidence, worldwide, HCC/liver cancer is the third leading cause of cancer death. The high mortality as- ciated with HCC arises because the disease is often detected late and is unresponsive to treatment. The number of deaths caused by PHCC is expected to rise over the next 20 years. Those chronically infected with HBV have a life risk of death to HCC of between 10 and 25%. Even the limited efficacy of drugs for the treatment of chronic HBV helps underscore the point that this disease is responsive to therapy. Drugs that target the polymerase (e. g. , hepsera and lamivudine) and interferon alpha represent two distinct strategies and show that both conventional antiviral and immunothe- peutic approaches can be used in management. However, the current inventory of therapeutics is inadequate. Interferon alpha is of limited value, only parenterally ava- able, and fraught with adverse reactions.

Roferon-A in Chronic Viral Hepatitis-David Schwicker 1994

Atlas of the Liver-Willis C. Maddrey 2013-12-18 In the third edition of the Atlas of the Liver, the authors present (and evaluate) many crucial concepts regarding liver disease using photomicrographs, charts and, tables. The goal of the Atlas of the Liver is to augment comprehensive texts. Every major hepatic disease is thoroughly addressed, along with guidance as to the most efficient and effective ways to treat them. Dr. Willis Maddrey, along with 24 leading hepatologists, has interwoven concepts from fields such as molecular biology with the results of clinical observations and trials in order to facilitate efficient, accurate diagnosis and the use of effective therapy.

CBD Oil for Hepatitis C: The Effective Remedy to Cure Liver Disease, Hepatitis C Virus Using CBD Oil-Eric Hilton 2019-02-20 Hepatitis is a condition defined by inflammation of the liver. The disease is mainly caused by a viral infection although there are other probable causes of the same. These causes include toxic substances, e.g., alcohol, drugs or medications and autoimmune diseases.Autoimmune hepatitis occurs when the body makes antibodies against the liver tissues. Hepatitis can cause liver cirrhosis, liver failure or even cancer.The disease is primarily transmitted when an uninfected person ingests water or food that has been contaminated with feces of an infected individual. It can also be spread when blood or semen or any other body fluid from an infected person is passed to an uninfected individual. There are five types of the infection. Hepatitis D type occurs only when hepatitis B has been present.In recent years, CBD or cannabidiol has proved to be effective in treating many varieties of illness in laboratories and clinical trials. According to my study, CBD can be used as a treatment for hepatitis. CBD interacts with endocannabinoid receptors in our bodies to offer relief of hepatitis symptoms in autoimmune and viral hepatitis. Research has unveiled that the receptors can be activated to reduce hepatic inflammation which stops liver scarring. For example, when the cannabinoids attach to the CB2 receptor, it helps in reducing the inflammation of a fatty liver and also promotes regeneration. CBD helps in relieving the pain from liver disease and the side effects caused by the treatment. To find out more, GET A COPY TODAY!

Hepatitis B Cured-John Leggette 2018-08-13 Chronic hepatitis B virus (HBV) infection affects over 350 million people worldwide and over 1 million die annually of HBV-related chronic liver disease. Although many individuals eventually achieve a state of nonreplicative infection, the prolonged immunologic response to infection leads to the development of cirrhosis, liver failure, or hepatocellular carcinoma (HCC) in up to 40% of patients. In endemic areas, where carrier rates are >5%, most individuals are infected perinatally, by vertical transmission, or in early childhood. In the United States, where prevalence is low except in particular areas and populations (e.g., Alaskan natives, immigrants from highly endemic areas), transmission is generally horizontal, percutaneous, or via sexual contact in adulthood. A variety of host (age at infection, gender, immune status); viral (viral load, genotype, mutation); and external (concurrent viral infections, alcohol consumption, chemotherapy) factors influence disease progression. Several variables (age at infection, gender, ethnicity, immune status) also influence the risk of chronic infection. Perinatal transmission, the most common mode of infection worldwide, can be reduced by appropriate prophylaxis (vaccination of the infant at birth together with hepatitis B immune globulin); anti-viral therapy in late pregnancy may also be beneficial. This book is designed to help you become aware of the various treatment options for Hepatitis B. It will also present simple self-help guidelines that you can adopt to help cure the infection at home. Other valuable tips are also included to provide you with plenty of sufficient information to understand, effectively manage, and successfully combat your Hep B so that you never have to worry about it again.

Guide To Natural Treatment For Hepatitis B And Hepatitis C-Ben Mark 2021-01-23 There is no cure in traditional medicine for viral infections such as herpes, hepatitis C or B, CMV virus, EB virus & others.But, follow the laws of nature and you can cure anything! Here is how: Germ growth and expansion is a natural phenomenon true for all bacteria, viruses and parasites.Leaves are expanded so they have expansion energy. This expansion energy will help germs multiply and expand faster making infections worse.Root vegetables, on the other hand, are dense and contracted so they have contraction energy. This contraction energy will constrict and prevent all germs from multiplying, thus, naturally curing any and all infections.Some root vegetables with contraction energy are the best natural antibiotic in the world, effective against bacteria, viruses and parasites including drug-resistant microbes.Find out how to cure any infection with the wise selection of your food

Guidelines on Hepatitis B and C Testing-World Health Organization 2018-02-06 Testing and diagnosis of hepatitis B (HBV) and C (HCV) infection is the gateway for access to both prevention and treatment services, and is a crucial component of an effective response to the hepatitis epidemic. Early identification of persons with chronic HBV or HCV infection enables them to receive the necessary care and treatment to prevent or delay progression of liver disease. Testing also provides an opportunity to link people to interventions to reduce transmission, through counselling on risk behaviors and provision of prevention commodities (such as sterile needles and syringes) and hepatitis B vaccination. These are the first WHO guidelines on testing for chronic HBV and HCV infection and complement published guidance by WHO on the prevention, care and treatment of chronic hepatitis C and hepatitis B infection. These guidelines outline the public health approach to strengthening and expanding current testing practices for HBV and HCV, and are intended for use across age groups and populations.

Chronic Hepatitis B Infection: New Insights in Therapy and Predictors of Response- 2014

Hepatitis B and D Protocols-Robert K. Hamatake 2004-01-28 Despite the availability of an effective vaccine, there are still 400 million people, worldwide who are chronically infected with hepatitis B virus (HBV). For them, the vaccine, as currently applied, has no value. Given the possible consequences of HBV infection, the number of those chronically infected with HBV presents an enormous public health challenge. For example, the major etiology of hepatocellular carcinoma (HCC) is chronic infection with HBV. Although fifth in cancer incidence, worldwide, HCC/liver cancer is the third leading cause of cancer death. The high mortality as- ciated with HCC arises because the disease is often detected late and is unresponsive to treatment. The number of deaths caused by PHCC is expected to rise over the next 20 years. Those chronically infected with HBV have a life risk of death to HCC of between 10 and 25%. Even the limited efficacy of drugs for the treatment of chronic HBV helps underscore the point that this disease is responsive to therapy. Drugs that target the polymerase (e. g. , hepsera and lamivudine) and interferon alpha represent two distinct strategies and show that both conventional antiviral and immunothe- peutic approaches can be used in management. However, the current inventory of therapeutics is inadequate. Interferon alpha is of limited value, only parenterally ava- able, and fraught with adverse reactions.

Impact of HBV Infection on Outcomes of Direct-Acting Antiviral Therapy of Chronic Hepatitis C-Kazuhiko Hayashi 2017 Background: Most clinical trials of direct-acting antiviral (DAA) therapy for hepatitis C virus (HCV) infection have excluded hepatitis B virus (HBV) coinfection, and little is known about the effects of DAA on chronic hepatitis C patients with HBV coinfection. Recent studies have reported that DAA therapy for HCV can also cause HBV reactivation in patients with HBV and HCV coinfection. The aim of this study was to assess the effects of DAA on sustained virologic response (SVR) and HBV reactivation in patients with chronic hepatitis C. Methods: Participants comprised 199 chronic hepatitis C patients who received DAA therapy (96 men, 103 women; mean age, 66.7 ± 12.0 years). Results: Twelve patients were coinfected with HCV and HBV. Sixty patients were HBV surface antigen negative but positive for hepatitis B core antibody and/or hepatitis B surface antibody, and one hundred and twenty-seven patients had not been exposed to HBV. Rates of SVR in HBV and HCV coinfected patients, HBV prior infection, and no exposure to HBV were 100, 95, and 97%, respectively. Significant differences were seen between each group. No case showed HBV reactivation. Conclusions: DAA treatments were effective in patients with HBV coinfection or HBV prior infection, as well as HCV monoinfection. As the number of cases was small, we still suggest caution regarding HBV reactivation in HCV and HBV coinfected patients undergoing treatment with DAA.

Hepatitis B Treatment-Kandice Holverson 2015-05-07 Hepatitis B is an infectious disease caused by a virus that attacks the DNA of your body's cells. It can occur without symptoms in some individuals until the infection becomes life threatening. For this reason, early detection and early action are crucial so as to prevent further complications and begin treatment measures. However, finding a cure for Hepatitis B virus can be a challenging task because people respond differently to medication. Since there is no single treatment for the condition and viruses are difficult to destroy, it is important to get a proper diagnosis from your doctor and commence treatment immediately after. Delaying this process can worsen the condition. This book is designed to help you become aware of the various treatment options for Hepatitis B. It will also present simple self-help guidelines that you can adopt to help cure the infection at home. Other valuable tips are also included to provide you with plenty of sufficient information to understand, effectively manage, and successfully combat your Hep B so that you never have to worry about it again.

Prevention of Occurrence and Recurrence of Human Hepatocarcinogenesis-Soo Ryang Kim 2005-01-01 Hepatocellular carcinoma (HCC) is one of the most common malignancies in Asia. The annual incidence in both Japan and South Korea exceeds 30 cases per 100,000 and is predicted to continue increasing. This special issue explores the feasibility of delaying or preventing the occurrence and recurrence of human hepatocarcinogenesis in Asian countries, especially in Japan and South Korea. The underlying cause of HCC is different in these two countries: whereas in Japan up to 15% of the cases are caused by HBV infection and ~80% by HCV infection, the corresponding figures in South Korea are ~70% and ~20%. Recent data have shown that interferon (IFN) treatment is effective in delaying or preventing the occurrence and recurrence of HCC attributed to HCV infection. A randomized control study has demonstrated that the administration of IFN or acyclic retinoid significantly reduces the incidence of secondary HCC in patients who undergo curative removal of the primary HCC. Nevertheless, IFN and lamivudine therapy for the prevention of HCC in hepatitis B remain to be elucidated. Providing a broad range of state-of-the-art articles, this publication will be of benefit to clinicians and investigators working in the areas of hepatology, viral

hepatitis and gastroenterology.

Gene Therapy for HIV and Chronic Infections-Ben Berkhout 2015-03-10 This book centers on gene therapy and gene transfer approaches to prevent or treat chronic virus infections. The main focus is on the Big Three: human immunodeficiency virus (HIV-1), hepatitis B virus (HBV) and hepatitis C virus (HCV). Ample anti-HIV drugs are currently available in the clinic and the development of an effective combination therapy has dramatically improved the lifespan and quality of life of infected individuals. A similar trend can already be recognized for HBV and HCV: the development of multiple (directly acting) antiviral drugs and plans to control or even cure the infection. However, approaches that help prevent infection, or which provide long-lasting treatment (such as a cure) remain important goals. Immunization through gene transfer vehicles encoding immunogenic viral proteins shows promise in preventing infections with complex, highly variable, viruses such as HIV-1 or HCV. Gene therapy applications for virus infections have been discussed since the early 1990's. Whereas a true cure seems difficult to achieve for HIV-1 due to its intrinsic property to deposit its genome into that of the host, such attempts may be within reach for HCV where spontaneous viral clearance occurs in a small percentage of the infected individuals. The prospect of original gene therapy approaches may provide alternative ways to reach the same endpoint by, for example, silencing of CCR5 expression post-transcriptionally. Many alternative antiviral strategies have been developed based on a variety of novel molecular methods: e.g. ribozymes. Some studies have progressed towards pre-clinical animal models and a few antiviral gene therapies have progressed towards clinical trials. This book provides an overview of this rapidly progressing field, while focusing on the interface of gene therapy and immunology/vaccinology.

The Role of the Innate Immune System in Chronic Hepatitis B Infection-Dilipkumar Thomas Ratnam 2014 The global burden of Hepatitis B virus infection remains high despite the availability of a highly effective vaccine and potent antiviral agents. It is estimated 350-400 million people are chronically infected, and consequently at risk of developing the complications of cirrhosis, liver failure and hepatocellular carcinoma. The host immune system appears to be a major determinant of the impact of HBV infection in a given individual, influencing the risk of viral persistence following acute infection, the different phases of chronic infection, and also mediating much of the virus associated liver injury. In addition, immunomodulatory therapy comprises one of the major classes of treatment for chronic hepatitis B (CHB). Much of the early focus centred on the adaptive immune system, however recently there has been increasing interest in the role of innate immune mechanisms. Equipped with a broad range of pattern recognition receptors, effector cells and a variety of secreted immunomodulatory and antiviral cytokines, this arm of the host immune system appears ideally positioned to both mediate the immediate antiviral response and direct the adaptive immune response. However, despite the recognition of its potential importance, the mechanisms that underlie innate immune function in CHB remain poorly defined. Interferon-[alpha] is a key mediator of the innate immune system and was the first recognised effective treatment for CHB. Pegylated Interferon-[alpha] (Peg-IFN) is now the preferred formulation, but despite offering the advantage of a fixed treatment course and potential for durable responses is used far less commonly than nucleos(t)ide analogues due to lower rates of viral suppression and a less favourable adverse event profile. Such concerns are further heightened by a lack of published data relating to its use in a real world setting where outcomes are often poorer than in controlled studies. The first aim of this thesis was to perform a real world study of CHB patients treated with Peg-IFN to determine its viability as a therapeutic option in day to day clinical practice. In a large multicenter cohort, the observed rate of HBeAg to Anti-HBe seroconversion was 32%, similar to that of multiple large controlled trials. In these HBeAg positive patients the HBV DNA suppression rates below both the detectable threshold of 351 IU/ml and the widely used cutoff of 2000 IU/ml were 22% and 16% respectively. In the HBeAg negative patients, the corresponding rates of viral suppression were 37% and 50% which compare favourably to the published literature. In a subset of patients followed for 2 years after completion of therapy, the durability of the viral suppresion ranged from 50-75%. Concerns regarding the tolerability of Peg-IFN in a real world setting did not bear out in this study, with over 90% of patients completing the 48 week treatment course and only 2 patients experiencing significant AEs. Plasmacytoid dendritic cells (pDC) are the most potent cellular producers of IFN-[alpha] in the peripheral blood, and together with myeloid dendritic cells (mDC) are considered sentinels of the innate immune system. Like much of this arm of host immunity, the activity and function of both subsets is mediated predominantly through the family of toll like receptors (TLR). The second aim of this thesis was to examine TLR mediated function of DCs in the setting of CHB. Myeloid DC production of the TNF-[alpha] in response to TLR2 stimulation was found to be reduced in patients with HBeAg positive CHB compared to HBeAg negative patients and controls, a finding not previously described. This is consistent with previous studies that suggest the HBeAg appears to target TLR2 in CHB as part of a strategy by the virus to avoid immune detection and clearance. No changes were noted in the mDC response to TLR4 signalling despite evidence that this receptor may be a mediator of tissue damage in other models of liver disease. Plasmacytoid DC IFN-[alpha] production in response to stimulation with Influenza virus which acts through TLR7 was significantly impaired across all stages of CHB independent of viral load, HBeAg status or ALT. Similar findings have been described in relation to pDC TLR9 signalling, and together suggest a major functional impairment involving key components of the innate immune system in CHB.Natural killer cells are another key mediator of the innate immune system and have a capacity for both antiviral activity as well as tissue damage. The precise role of NK cells in CHB remains unclear, particularly in relation to TLR signalling. In a series of experiments, NK cells were shown to produce IFN-[gamma] in response to PBMC stimulation with agonists of TLRs 3, 4, 7/8 and 9. The cytokine response to TLR9 was significantly impaired in CHB patients compared to controls. Further experiments suggested this impairment involved indirect pathways mediated through IFN-[alpha]. In contrast, the NK cell capacity to upregulate the activation marker CD69 in response to TLR9 stimulation was not affected in CHB, raising the possibility that other aspects of NK cell function such as the capacity to mediate tissue injury remain intact.In an effort to understand the wider impact of TLR dysfunction in CHB, the IFN-[gamma] responses of naïve and memory CD4+ and CD8+ T cells and NKT cells to TLR agonists were also examined. All cellular subsets produced cytokine in response to PBMC stimulation with TLR 3,4,7/8 and 9 agonists, but no differences were noted in these responses between CHB patients and controls. Studies involving HBV specific T cells may be required to further understand the impact of TLR dysfunction on the adaptive immune systemIn conclusion, this thesis provides a number of insights into the significance of the innate immune system in CHB. TLR mediated changes in DCs and NK cells favour viral persistence rather than clearance through impaired type 1 IFN production. The functional dichotomy observed in NK cells in response to TLR 9 supports a model where activated NK cells may still have the potential to mediate tissue damage despite impaired antiviral activity.

Such insights have the potential to further contribute to the ongoing development of immunotherapies that are likely to hold the most promise in achieving the goal of sustained viral clearance.

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