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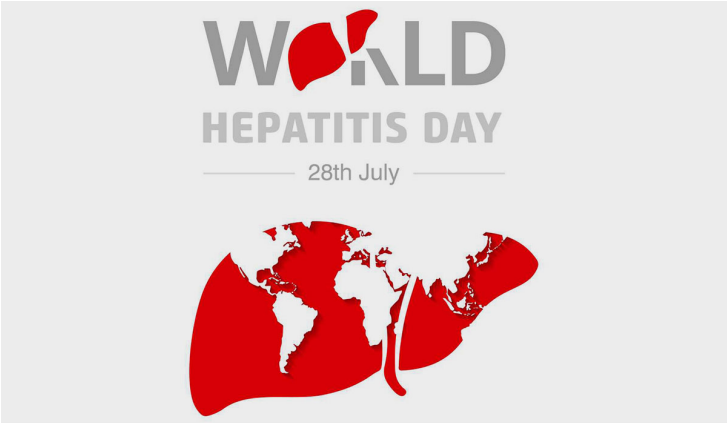
Scale up investments in Hepatitis elimination: WHO

26 July 2019 | News

Experts share their views on World Hepatitis Day



On World Hepatitis Day (28 July), WHO calls on countries to take advantage of recent reductions in the costs of diagnosing and treating viral hepatitis and scale up investments in disease elimination. By investing in diagnostic tests and medicines for treating hepatitis B and C now, countries can save lives and reduce costs related to long-term care of cirrhosis and liver cancer that result from untreated hepatitis.

The Government of India, for example, has announced that it will offer free testing and treatment for both hepatitis B and C, as part of its universal health coverage plan. This has been facilitated through the reduction in prices of medicines. In India, a hepatitis C cure costs less than US$40 and a year of hepatitis B treatment costs less than US$30. At these prices, hepatitis C cure will result in healthcare cost savings within three years.

BioSpectrum interacted with Healthcare experts this World Hepatitis Day to find out how this disease can be eliminated-

"Viral hepatitis imposes a major healthcare issue in India. While HAV and HEV can be prevented by maintaining adequate hygienic conditions and HAV vaccination, HBV and HCV infection prevention will require active screening and treatment, vaccination and educational counseling to help control viral hepatitis in India.

Viral hepatitis is treatable and preventable. Provision of safe and clean drinking water and improving sanitary conditions constitute important factors in preventing spread of **HAV and HEV.** Simple methods like maintaining proper hand hygiene is effective to prevent virus spread. However, the cornerstone in preventing HAV is vaccination. Both inactivated and live attenuated vaccines are licensed and available for use in India. The Indian Academy of Pediatrics recommends two doses of vaccines to be given 6 months apart to children aged 1 year or older. Minor adverse reactions which usually occur include local pain and swelling. Though we do not currently have a vaccination against HEV, different types of HEV vaccines are now under development.

Preventive approaches of **HBV infection** should include vigilant screening of blood and blood products and routine testing of tissue and organ donors. High-risk group of patients who receive blood transfusions (patients with thalassemia major),

intravenous drug users, and health care workers should be regularly screened for infection with HBV. Adequate education and counseling regarding safe injection use, use of barrier contraceptives (e.g. condoms) and safe sexual practices should be provided to high risk groups. Vaccination against HBV forms the preventive pillar for HBV infections. Recombinant DNA-based vaccines are available for use in India at a dosing schedule of 0, 1 and 6 months and are aimed to achieve a protective anti-HBs titre of >10 mIU/ml.

Prevention of **HCV infection** also involves active screening of high-risk groups and meticulous education and counseling targeting both groups at risk and general population. Newly available directly acting anti-viral agents (DAA) offer extremely effective treatment options for HCV infections. However, no HCV vaccines are currently available for HCV prevention. Vaccines against HCV are now under phase I/II clinical trials."

Dr. Pradeepta Kumar Sethy, Director, Department of Gastroenterology, Medica Superspecialty Hospital

"Not just globally, hepatitis is a severe health challenge in India as well. According to a 2017 study published in the Journal of Clinical and Translational Hepatology, India has a disease burden of about 50 mn; second only to China; with a prevalence of 2-7%.

The lack of symptoms for any disease only makes the situation worse. Accurate diagnosis is therefore essential for prevention of transmission and effective treatment. For serodiagnosis, HBsAg (Hepatitis B surface antigen) and HBeAg (Hepatitis B envelope antigen) are two HBV specific antigens that can be detected directly in the serum of an infected person. HBsAg is the major viral immunogenic surface protein, produced in all strains of HBV. It can be detected in the serum as a diagnostic marker of active HBV replication. Its presence in the serum for more than 6 months, indicates a chronic HBV infection.

Antibody detection, namely detection of anti HBsAg and antiHBe is not useful in diagnosing chronic HBV infection. The presence of anti-HBs (antibody against HBsAg) indicates either a past HBV infection or recent vaccination. Anti-HBe (antibody against HBeAg) indicates lower levels of HBV and low contagiousness.

The HBsAg has a single major antigenic determinant, called the ‘a determinant’. Mutations inducing a conformational change within the ‘a determinant’, may result in a variant epitope of HBsAg, that is not recognized by some diagnostic assays. A number of studies have evaluated the available HBsAg diagnostic assays for their ability to detect well-defined HBsAg mutants.

Currently, a majority of the diagnostic assays use monoclonal antibodies directed to the “a” determinant of HBsAg, in order to capture the protein. Mutations within this region, change the ability of the protein to be detected by monoclonal antibodies. Thus, monoclonal antibodies alone may not be sufficient to detect altered HBsAg associated with mutations. A more robust approach is to use a pool of well-characterized polyclonal antibodies directed to HBsAg. Polyclonal antibody based assays appear to detect mutant HBsAg as well.

Transasia has developed advanced HBsAg ELISA kits, ErbaLisa PICO HBsAg and ErbaLisa SEN HBsAg, with a pool of polyclonal antibodies coated on the microwells to maximize the sensitivity for HBsAg mutants. The conjugate reagent contains monoclonal antibodies specific to HBsAg, thereby ensuring better specificity too.

ErbaLisa SEN HBsAg and ErbaLisa PICO HBsAg also offer best in class analytical sensitivity of 0.1 ng/ml and <50 pg/ml respectively with a turnaround time (TAT) of only 75 minutes, thereby making them convenient and reliable for use in screening for HBV infection."

Rashmi Jha, Asst. Product Manager- Immunology, Transasia Bio-Medicals Ltd.

"The diagnosis of Hepatitis B is done through a blood test called HBsAg. It is important to get a liver function test and an ultrasound of the abdomen to access the degree of the infection. There is no specific treatment for the acute phase of Hepatitis B- comfort care, managing the and hydration and avoiding unnecessary medicines, including paracetamol is important. Chronic Hepatitis B can be managed with oral antiviral agents.

The best way to prevent Hepatitis B is to get vaccinated. It is a 3 dose schedule and is safe for all age groups including newborns and pregnant women."

Dr Sudha Menon, Director, Internal Medicine, Fortis Hospital, Bannerghatta Road

"It is estimated that about 40 million people are suffering from chronic Hepatitis B and 6 to 12 million people with Hepatitis C. The pressing issue at the moment is that most people are unaware that they are suffering from a Hepatitis infection and unaware of this, they may be passing on the infection to others.

Hepatitis spreads through contact with infected bodily fluids. Apart from avoiding high risk behaviors such as practicing unsafe sex and allowing unsafe, unhygienic materials like needles and blades to come into contact with the bloodstream, one can also ensure they are following a healthy lifestyle to strengthen their immune system. This can be done by following a balanced diet with a good amount of fruits and vegetables, variety of whole grains in moderate quantities, adequate protein and fibre intake combined with the right proportion of healthy fats and oils, aided by enough exercise."

Dr. Mallikarjun Sakpal, Consultant - Hepatology & Liver Transplantation, Aster CMI Hospital

"According to a report by the World Health Organization in 2016, globally, about 1.4 million people die each year from hepatitis. It is estimated that only 5% of people with chronic hepatitis know of their infection, and less than 1% have access to treatment. The vision of eliminating hepatitis as a public health threat by 2030 can be achieved, if people and countries affected by this disease were better equipped and enabled to ‘know hepatitis’ and ‘act now’. Increasing access to hepatitis testing is the key to scaling up hepatitis treatment and care. Many people suffering from hepatitis are unaware of their infection, in part due to a lack of awareness and lack of access to testing services in countries. People who need treatment have not been treated, largely due to a lack of awareness, and access to hepatitis treatment services. Thus, people should be regularly screened and vaccinated. Washing hands after using the bathroom can be helpful. In case, you use needles or syringes, do not share them with others. Avoid sharing personal items like razors, nail clippers, toothbrushes, or glucose monitors. Do not get tattoos or body piercings from an unlicensed person. Hepatitis b and c virus have high chance of cirrhosis and liver cancer. Hepatitis a and b can be prevented by vaccination. Hepatitis may be more dangerous in pregnancy and specialist should be consulted. Antiviral Rx available in hep b and c. Disease can be controlled in hep b or in hep c can be cured."

Dr Roy Patankar, Director, Zen Hospital