

Preventive hepatology: An ounce of prevention or pounds of cure to curb liver diseases

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ABSTRACT

Liver diseases are now the leading cause of both morbidity and mortality profile globally with rising trends due to unhealthy lifestyle. Most of the liver diseases are preventable. Scientific evidences have well supported and documented that almost 90 percent of all major liver diseases are either the manifestations of asymptomatic hepatitis virus infections or poor lifestyle choices leading to accumulation of fat in liver that could be detected even before they present themselves as chronic liver diseases. Understanding liver diseases as a preventable disease and practising necessary preventive measures will help in lowering the risks of various types of liver diseases as well as liver cancer.

Keywords: Hepatology, Preventive Hepatology, Preventive Medicine

Burden of Liver Diseases

Every year, liver disease leads to more than 2 million deaths worldwide, half due to complications of chronic liver disease (CLD) and half due to viral hepatitis and liver cancer.^[1] Globally, CLD and liver cancer account for 3.5% of all deaths. From 1990 to 2017, the number of deaths and disability adjusted life years and the proportion of all global deaths due to CLD have increased drastically.^[2] CLD is within the top 20 causes of disability adjusted life years and years of life lost. Of 2 billion people who consume alcohol worldwide, more than one-third are diagnosed with alcohol-abuse disorders and are at a risk of alcoholic liver disease (ALD). About 2 billion adults are

overweight and more than 400 million have diabetes and both are risk factors for nonalcoholic fatty liver disease (NAFLD) and liver cancer.^[1] Globally, the prevalence of viral hepatitis remains high. About 58 million of estimated chronic hepatitis C patients need treatment and about one-fifth of 256 million hepatitis B patients are treatment eligible.^[3,4] Although these numbers are sobering, they highlight an important opportunity to improve public health, given that a substantial proportion of liver diseases are preventable.

Prevention: The Crucial Intervention to Curb Liver Diseases

With our inability to cure the primary liver diseases (except Hepatitis C), prevention becomes the crucial intervention. Not only primordial and primary prevention via health promotion and specific protection approach are essential, preventing further worsening and delaying the progression

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to cirrhosis is equally obligatory. Once cirrhosis occurs, no strategies have been found yet that can be applied to reverse the process. Studies have documented a strong association and an increased severity of CLD with a personal and family history of metabolic risk factors.^[5-7] Preventive strategies can help prolong this time by avoiding/slowing down further damage and mitigating comorbidities. Liver diseases usually have long natural histories but only few treatments directly alter their course. To increase the time to development of CLD and reduce the need for liver transplantation and to improve survival, it becomes necessary to avoid further insults to the liver.

Preventive Strategies for Liver Diseases

Studies show that the preventive strategies of alcohol avoidance, hepatitis B vaccination, avoidance of nonsteroidal anti-inflammatory drugs, and promotion of healthful lifestyle (physical activity and a low-fat diet) are prudent in patients with or at risk of developing chronic liver disease.^[8]

Chronic Hepatitis B, C, NAFLD, and ALD are the major underlying causes of CLD-induced deaths, 92% among males and 82% among females.^[2] With effective primary prevention through vaccination for hepatitis B and secondary prevention by testing (early detection) and treatment with directly acting antiviral drugs for hepatitis C, the impact of hepatitis B and C are expected to drop in the near future.

Early prevention during childhood or adolescence, reducing the risk factors like unhealthy diet, harmful intake of alcohol, and sedentary lifestyle via health education and health promotion activities will reduce the risk for both NAFLD and ALD. Similar to India, integration of NAFLD with noncommunicable disease (NCD) program is the need of hour.^[9] There is an urgent need for policy action and inclusion of NAFLD, ALD, and related CLD and liver cancer in the WHO NCD action plan.^[10,11]

Family Screening for Active Case Detection

Intrafamilial transmission and aggregation of cases are well documented for hepatitis B and NAFLD. Family screening for hepatitis B markers and fatty liver among apparently healthy first-degree relatives is a well-known effective strategy for early detection and timely initiation of preventive and curative interventions. This will prevent and reduce the risk of the development of cirrhosis and liver cancer. Family history of liver cancer multiplies the risk of liver cancer at each stage of hepatitis B infection. The multivariate-adjusted hazard ratio for HBsAg-seropositive individuals with a family history, compared with HBsAg-seronegative individuals without a family history of HCC, was 32.3 (95% confidence interval, 20.8–50.3; $P < .001$). Patients with a family history of liver cancer require more intensive management of HBV infection and surveillance for liver cancer.^[12]

Birth dose a Key Strategy to Eliminate Hepatitis B

The proportion of new chronic HBV infections attributable to mother-to-child transmission (MTCT) was estimated to increase to 50% in 2030 from 16% in 1990. High childhood vaccination coverage rates along with birth dose still remain crucial to all elimination plans. A modelling study, highlighted Hepatitis B immunization, especially the birth dose as a major public health accomplishment and estimated to have saved 310 million infections of hepatitis B between 1990 and 2020.^[13] Increasing new infections through MTCT makes screening of pregnant women for HBsAg along with high coverage of the Hepatitis B birth dose and pre partum antiviral therapy, key indicators to achieve elimination.^[14] Combination of HBV immunoglobulin and vaccine schedules reduces MTCT by 94%.^[15]

Preventive Hepatology as a Sub-Speciality

Clinical and surgical departments are equipped to manage complicated and critical cases of liver diseases. However, an additional preventive hepatology subspeciality can use the opportunity to educate and counsel patients and screen, counsel, and educate accompanying family members who often go undiagnosed for many liver diseases, especially NAFLD, hepatitis B, hepatitis C, and ALDs, which are mainly asymptomatic. Residents from general medicine and gastroenterology can be posted in these clinics under the overall leadership of a community medicine physician to ensure that care is person/family centered with structured longitudinal follow-up.

This subspeciality must also regularly undertake health awareness, education, and promotion activities in the community through satellite preventive hepatology clinics at primary health centers. For this, capacity of the primary care physician must also be ensured. Initiating academic courses like postgraduate diploma or certificate courses will help building a new cadre of residents with knowledge and skills for different levels of preventions for liver diseases.

Preventive hepatology will be a subspeciality focused on lowering patients' risk for developing liver diseases and also for preventing the complications and sequelae in patients who already have liver diseases. Cutting-edge research like community-based large cohort studies will be the mandate of this subspeciality.

Conclusion

We highlighted the need and thus conclude recognition of preventive hepatology as an integrated transdisciplinary subspeciality within community medicine in line with well-established and proven successful models of preventive cardiology, preventive oncology, and preventive ophthalmology. Preventive hepatology clinics in a tertiary care center as a hub with multiple community-based clinics as spokes will be the ideal model to achieve the desired goal of reducing the burden

of liver diseases. Cost-effective interventions like preventive hepatology clinics are required to prevent, to diagnose early, and to effectively manage CLD due to viral hepatitis, alcohol, and NAFLD. Integration of preventive hepatology module in comprehensive primary healthcare domain of Ayushman Bharat Program will further strengthen primary care delivery through health and wellness centers.

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Conflicts of interest

There are no conflicts of interest.

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