[Plenary Lecture]

Liver Cancer Prevention – from Fetus to Adults

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Liver Cancer is the 2nd most common cause of cancer death in the world. Chronic hepatitis B virus (HBV) infection is closely related to chronic hepatitis, liver cirrhosis, and liver cancer. Asian people have high rates of HBV infection and liver cancer in both children and adults.

We have provided serial sequential evidences to demonstrate that the HBV immunization program has successful reduced approximately 90% of chronic HBV infection in the vaccinated birth cohorts. We have also provided the first evidence to support HBV vaccine as the first cancer preventive vaccine in human, which reduced approximately 70% of liver cancer in children and adolescents. Successful liver cancer prevention effect was later also reported in other areas in the world, such as Khon Kaen, Thailand and Alaska, U.S.A. More recently we have provided further evidence to demonstrate that the cancer preventive effect of hepatitis B vaccination in infancy has been extended from children and adolescents to young adults.

In spite of the great success, still there are problems to be overcome for the better prevention of hepatitis B and liver cancer. Vaccine failure is the key problem to be solved. Mother-to-infant transmission of HBV from highly viremic mothers is the main cause of vaccine failure. Other causes include hepatitis B surface gene mutation, and immune hypo- or non-responsiveness to hepatitis B vaccine. Developing effective strategies to block maternal transmission of HBV is very important to prevent vaccine failure, and to achieve better prevention for hepatitis B and liver cancer. Short term antiviral therapy against HBV for highly B viremic mothers at third trimester of pregnancy is effective in further reducing the HBV vaccine failure rate in their infants.

In conclusion, to prevent liver cancer in children and adults, we should work hard to block mother-to-infant transmission of HBV starting from fetal and neonatal period.