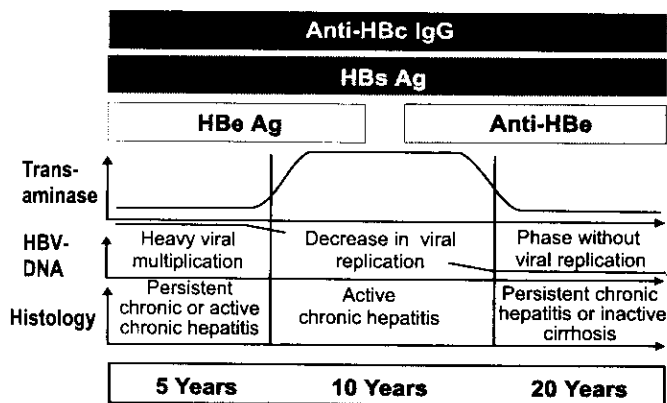


fection, the antibody titer increases significantly. This information is very useful for identifying chronic cases.^{1,2} However, the best technique for diagnosing hepatitis D is based on the detection of tissue antigen through immunofluorescence or immunoperoxidase techniques.²

Figure 2
Dynamics of the evolution of serological markers in chronic hepatitis B



Pasteur³

Serological Markers of Hepatitis D (Table 2)

- 1 HDAg:** There is some controversy regarding the usefulness of this marker in the detection of Hepatitis D. According to some authors, antigenemia permits diagnosis in serum specimens obtained during the first week of the illness. For other authors, HDAg is a marker inconsistently detected in serum, especially in the case of superinfection.¹³
- 2 Anti-HD IgM:** Appear with the acute symptoms of the illness and, when available, are used both for diagnosis and for monitoring patients receiving interferon therapy, since they disappear when the illness is eliminated. They are the most stable markers and are detected before anti-HD IgG. There is a strong correlation between anti-HD IgM, the presence of HD RNA in serum and HDAg in the hepatocyte nuclei.^{2,13}
- 3 Anti-HD IgG:** A marker for past infection and immunity, appearing in serum at about 12 weeks.

Table 2
Interpreting the serological profile of hepatitis D

| Interpretation | HBS Ag | Anti-HBc IgM | HD Ag | Anti-HD IgM | Anti-HD IgG |
|--------------------------------------|--------|--------------|-------|-------------|-------------|
| Coinfection or recent superinfection | + | - | + | - | - |
| Recent coinfection | + | + | - | + | - |
| Recent superinfection | + | - | + | + | - |
| Old superinfection | + | - | - | - | + |
| Immunity | - | - | - | - | + |

Source: Oliveira, M.L.A., Yoshida, C.F.T., Schatzmayr, H.G. "Diagnóstico Laboratorial das Hepatites Virais" Virology Department, Oswaldo Cruz Foundation, Rio de Janeiro, December 1995.

References

- Vitral, C.L.; Oliveira, L.H.S. Oliveira, S.A. Hepatites Virais. Virus da Hepatite A, B, C, D e E. In: Oliveira, L.H.S. *Virologia Humana*. Editora Cultura Médica (1994), pp. 283-301
- Dantas, U.; Dantas, E.B. Os virus da hepatite e seus marcadores: a ótica do clínico. In: Mendes, F.; Pitella, A.M. *Recentes Avanços em Hepatites*. Editora BYK (1993), pp. 11-18.

- Pasteur Vaccines. *L'Hepatitis B en question*. 1994 Edition.
- Kroes, ACM et al *Journal of Medical Virology* (1991), 35:96-100.
- Gerlich, WH; Caspari, G; Thomssen, R. A critical appraisal of anti-HBc, HBV DNA and anti-HCV in the diagnosis of viral hepatitis. *Biotest Bulletin* (1991), 4:283-293.
- Fonseca, JCF. Diagnóstico Sorológico das Hepatites Virais. *Gastroenterologia* (1994) 1(1): 10-16.
- Lee, HS; Ulrich, PP; Girish, WV Mutations in the S gene affecting the immunologic determinant of envelope proteins of Hepatitis B Virus. *J. Hepatol* (1991), 13(4):97-101.
- Carman, WF. Vaccine-associated mutants of Hepatitis B Virus. *Viral Hepatitis and Liver Disease*. (1994):243-247.
- Wallace, LA; Echevarria, JM; Carman, WF Monoclonal antibody reactivity associated with sequence changes in subtype defective variants of HBV in Spain. *J. Hepatology*. (1993), 18(1):S21.
- Howard, CR; Karthigesu, VD; Allison, LMC et al. Hepatitis B Virus Variants with altered α determinants causing infections in immunized children. *Viral Hepatitis and Liver Disease*. (1994), 252-255.
- Santantonio, T; Jung, MC; Miska, S et al. High prevalence of HBV pre C mutants in anti-Hbe positive carriers with chronic liver disease in South Italy. *J. Hepatol* (1991), 13(4):78-81.
- Carman, WF; Thomas, HC. Genetically defined variants of Hepatitis B Virus. *Reviews in Medical Virology* (1991), 1:29-39.
- Dubois, F.; Goudeau, A. Serological Diagnosis of Hepatitis B and Delta. *Laboratory Technical Reviews*, 4. Diagnostic Pasteur, p.28-36.

Argentina Introduces Hib and MMR Vaccines

In April 9, 1997, the Ministry of Health and Social Action of Argentina formally introduced the *Haemophilus influenzae* type b (Hib) vaccine and the combined live vaccine for measles, mumps and rubella (MMR) in the country's regular immunization program.

In the official text, the Ministry of Health mentions that Hib vaccine will prevent severe infections caused by this pathogen, such as meningitis and epiglottitis, which are highly lethal (5 to 8%), and can also leave sequelae like mental retardation and deafness (25 to 35%). The most affected group is between the ages of 2-28 months (35 to 40% of cases).

MMR vaccine is currently preventing three diseases (mumps, rubella and measles) which can cause death and leave physical sequelae, some of them severe. In the case of rubella it will also protect against congenital rubella syndrome (CRS).

Source: Ministry of Health and Social Action, Argentina.

Editorial Note: As announced in the *EPI Newsletter* in December of 1996 and the current issue (see page 8), Uruguay and Chile have already introduced Hib vaccine in their regular immunization schedule. Hib is also part of the regular vaccination schedule in the Cayman Islands and the Netherlands Antilles. Other countries considering Hib vaccine are: Colombia, Costa Rica, Dominican Republic, Mexico and Peru.

With the technical support of PAHO and led by the Ministry of Health, a commission was established in El Salvador to carry out surveillance for *H. influenzae*. In Nicaragua, a protocol was developed to expand the surveillance for *H. influenzae* in the majority of the country's hospitals.