W O R L D H E A L T H ORGANIZATION

ORGANISATION MONDIALE DE LA SANTE

REGIONAL OFFICE FOR THE WESTERN PACIFIC
BUREAU REGIONAL DU PACIFIQUE OCCIDENTAL

REGIONAL COMMITTEE WPR/RC50/9

Fiftieth session 30 July 1999
Macao
13–17 September 1999 ORIGINAL: ENGLISH

Provisional agenda item 13

HEPATITIS AND RELATED DISEASES

Viral hepatitis remains a significant public health problem in many countries and areas of the Western Pacific Region. In particular, hepatitis B and hepatitis C cause considerable morbidity and mortality. In December 1998 a meeting of the Western Pacific Region Working Group on Viral Hepatitis reviewed the current situation of viral hepatitis and identified priorities for action. The meeting noted that significant progress has been made in controlling hepatitis B through immunization and in reducing post-transfusion hepatitis. However, major efforts are still needed to ensure the sustainability of immunization activities, to improve blood safety and to reduce the risk of viral transmission through medical and other practices (including unsafe injections). The epidemiology of viral hepatitis needs to be monitored to improve planning for long-term control.

1. INTRODUCTION

Chronic liver disease and hepatocellular carcinoma caused by hepatitis B and C are among the most important public health problems in the Western Pacific Region. Hepatitis B carrier rates in some countries and areas of the Region, especially Pacific island countries, are among the highest in the world. Twenty-five countries and areas have reported a carrier rate greater than 8% of the general population (Table 1). Of the estimated 350 million chronic carriers of hepatitis B virus (HBV) worldwide, approximately 150 million live in the Western Pacific Region. Up to 10% of these chronic carriers can be expected to die of the effects of the infection. The vast majority of infections occur in infancy and early childhood and are transmitted from carrier mothers to their infants or from child to child. Immunization of infants is the main strategy to prevent these infections, and reduce the prevalence of chronic infection.

In addition, up to 50 million people in the Region may be infected with hepatitis C (Table 2). Principal modes of infection are through transfusion of unscreened blood and blood products, and exposure to blood during intravenous drug use, unsafe injections or unsafe medical procedures. Perinatal and sexual transmission may also play a role.

Hepatitis A is endemic in most countries, and is largely transmitted asymptomatically in early childhood. Although it does not at present constitute a major problem in most countries, the epidemiology of hepatitis A is changing. With improved standards of living, infection rates in young children are declining in some countries, but it is expected that infection rates of hepatitis A will increase in older children and adults who have not developed natural immunity when they were young.

From available information it appears that hepatitis E infection is more widespread than previously recognized, and in some countries hepatitis E virus is already emerging as a major cause of acute viral hepatitis. However, the epidemiology of hepatitis E is still not well understood and little information is available from most countries in the Region.

Modes of transmission and availability of vaccines for different types of hepatitis are contained in Table 3.

Table 1. Hepatitis B chronic carrier prevalence and immunization coverage rates by country/area (1992–1997)

Country/area	Prevalence HBsAg (%)	Immunization coverage (%)					
		1992	1993	1994	1995	1996	1997
American Samoa	7.0	47	49	68	47	59	
Australia	0.5						
Brunei Darussalam	8.0	96	100				98
Cambodia	12.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
China[a]	12.0						
Cook Islands	10.0	98	76	79	86	65	97
Fiji	11.0		88	60	82		98
French Polynesia	10.0	66				79	79
Guam	4.0			92	91	87	95
Hong Kong, China	12.0	81	82	82	98	99	87
Japan	2.0						
Kiribati	31.0	6	8	36	36	66	97
Lao People's Democratic Republic	12.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Macao	12.0	78	79	82	85		88
Malaysia	5.0		85				88
Marshall Islands	12.0	24	17	46	47	68	70
Micronesia, Federated States of	12.0		82	82	82		78
Mongolia	14.0		69	67	89	92	88
Nauru	n.a.				57		86
New Caledonia	8.0	100			93		27
New Zealand	1.0	67		81	88		100
Niue	n.a.	100	100	100	90	100	100
Northern Mariana Islands	5.0	82		67	94		98
Palau	12.0	75	94	73	100	100	90
Papua New Guinea	20.0	11	5		17	43	43
Philippines	10.0						31
Republic of Korea	12.0				100		
Samoa	8.0	18		97	96	98	99
Singapore	12.0	78	90	89	91		94
Solomon Islands	20.0		53	67	68	97	73
Tokelau	n.a.				50	65	
Tonga	20.0	82	96	90	91	94	95
Tuvalu	n.a.			17	49	49	88
Vanuatu	19.0	82	82		66	69	72
Viet Nam	12.0						
Wallis and Futuna	8.0	90	75		71		82

Source: All data from the Regional Office Computerized EPI Information System as at May 1999. Missing data indicates no report that year.

[a] Coverage data from China not reported, but estimated to be over 30% nationwide.

n.a. – Not available.

Table 2. Prevalence of hepatitis C virus infection, selected countries and areas, Western Pacific Region

Country/area	HCV serological surveillance					
	Prevalence (%)	No. positive	No. examined	Location	Sample	Year
Australia	0.31	299	94 970	Sydney	Blood donors	1990–1991
Cambodia	4.00	6	154	Takeo	General population	1990–1991
China	4.07	86	2 112	Guangxi Province	General population	1996 publication
Hong Kong, China	0.50					
Japan	2.30	35	1 542		General population	1985
Kiribati	4.80	18	385		General population	1991
Malaysia	3.00	11	363	Kuala Lumpur	Blood donors	1993 publication
Micronesia, Federated States of	1.50	1	66		General population	1988–1991
Mongolia	10.70				General population	1996 publication
New Zealand	0.33				Blood donors	1993 publication
Papua New Guinea	7.00	12	180		General population	1993 publication
Philippines	3.60					
Republic of Korea	1.70					
Singapore	0.54	22	4 091		Blood donors	1993 publication
Solomon Islands	1.00				General population	1991 publication
Vanuatu	1.00				General population	1991 publication
Viet Nam	6.10	61	1 002	Ha Noi, etc.	General population	1994 publication

Source for HBsAg prevalence: Regional Office Computerized EPI Information System.

Source for HCV data: WHO Headquarters database 14 November 1997.

Table 3. Characteristics of types of hepatitis

Type of hepatitis	Mode of transmission	Vaccine
A	Fecal/oral - food/waterborne	Yes
B	Bloodborne - sexual - perinatal	Yes
C	Primarily bloodborne - sexual and perinatal	No
D	Bloodborne - sexual - perinatal	No
E	Fecal/oral – waterborne	No
G	Bloodborne	No
TT	Bloodborne	No

2. PROGRESS IN CONTROL OF VIRAL HEPATITIS

2.1 Immunization against hepatitis B

In 1991 the Global Advisory Group of the Expanded Programme on Immunization called for all countries to add hepatitis B vaccine to their national immunization programmes. This recommendation was endorsed by the World Health Assembly in 1992, and the Health Assembly set disease reduction targets in 1994. These called for an 80% reduction in carrier rates in children by the year 2001. The limited availability of hepatitis B vaccine for national immunization programmes, largely due to cost, has been an obstacle to achieving this goal. Nevertheless, 34 out of 37 countries and areas of the Region are using the vaccine in their national immunization programmes, and all but four countries and areas have a policy of universal infant immunization.

Table 4 summarizes vaccine supply in 1998. In general, the vaccine supply situation is reasonable in the medium term. Of the large countries with high carrier rates, China is rapidly approaching full self-sufficiency in vaccine supply through production, and the Philippines is gradually approaching 100% of requirements through purchase. Viet Nam is introducing the vaccine gradually as production levels increase. However, Cambodia and the Lao People's Democratic Republic currently have no supply of vaccine.

The situation for smaller countries is currently good. Several Pacific island countries and areas have adequate supplies through reliable funding sources. In 1996 a joint Pacific Regional hepatitis B control project in 10 Pacific island countries, supported by UNICEF, WHO and the Governments of Australia and New Zealand, was established. This project is meeting vaccine requirements in full for three years (1996–1998) and partially for a further two years (1999–2000) while countries phase in national budgets for vaccine purchase (as was done for other vaccines in the Expanded Programme on Immunization).

Where adequate supplies of vaccine are available, hepatitis B immunization has been successfully integrated into national immunization programmes. For 1997, 19 countries and areas reported that hepatitis B immunization coverage of infants was over 80%, compared with 17 in 1995, 9 in 1994 and just 3 in 1992 (Table 1).

Table 4. Vaccine supply and self-sufficiency, hepatitis B vaccine

Country/area	Hepatitis B vaccine self-sufficient		Adequate supply 1998	Vaccine source
	1992	1998		
American Samoa	yes	yes	yes	Purchase
Australia	yes	yes	yes	Purchase
Brunei Darussalam	yes	yes	yes	Purchase
Cambodia	n.a.	no	no	NA
China	yes	no	no	Local production
Cook Islands	no	no	yes	Partner agency
Fiji	no	no	yes	Partner agency
French Polynesia	yes	yes	yes	Purchase
Guam	yes	yes	yes	Purchase
Hong Kong, China	yes	yes	yes	Purchase
Japan	yes	yes	yes	Local production
Kiribati	no	no	yes	Partner agency
Lao People's Democratic Republic	n.a.	no	no	NA
Macao	yes	yes	yes	Purchase
Malaysia	yes	yes	yes	Purchase
Marshall Islands	no	yes	yes	Purchase
Micronesia, Federated States of	no	yes	yes	Purchase
Mongolia	no	no	yes	Partner agency
Nauru	no	yes	yes	Purchase
New Caledonia	yes	yes	yes	Purchase
New Zealand	yes	yes	yes	Purchase
Niue	no	no	yes	Partner agency
Northern Mariana Islands	no	yes	yes	Purchase
Palau	no	yes	yes	Purchase
Papua New Guinea	partial	partial	partial	Partner agency, purchase
Philippines	partial	mostly	mostly	purchase
Republic of Korea	yes	yes	yes	Local production, purchase
Samoa	no	no	yes	Partner agency
Singapore	yes	yes	yes	purchase
Solomon Islands	no	no	yes	Partner agency
Tokelau	no	no	yes	Partner agency
Tonga	no	no	yes	Partner agency
Tuvalu	no	no	yes	Partner agency
Vanuatu	no	no	yes	Partner agency
Viet Nam	no	partial	partial	Local production
Wallis and Futuna	yes	yes	yes	purchase

Evaluations of the impact of hepatitis B immunization have been conducted in Australia, China, Japan and in some Pacific island countries. These evaluations have documented significant reductions in chronic carrier rates, typically to below 2% in immunized age groups. In China, the prevalence of HBsAg in children in Shanghai and Beijing was reported to have decreased from 10% to

1% following the introduction of hepatitis B vaccine. An evaluation of the impact of hepatitis B immunization in four Pacific island countries has recently been conducted. It demonstrated a significant reduction in the risk of immunized children becoming chronic carriers. The evaluation also showed high levels of protection (80%-86%) against transmission from infectious carrier mothers to their children.

2.2 Blood safety and the control of hepatitis B and C

Most industrialized countries have achieved a high level of hepatitis B and C control in recent years. In these countries blood safety is now well regulated and decreases in transfusion-related hepatitis have been observed. However, despite some notable improvements, blood safety is not optimal in most developing countries.

All countries and areas in the Western Pacific Region test for Hepatitis B surface antigen either before or after donation. Blood donations are screened for hepatitis C virus (HCV) antibodies in all the larger countries of the Western Pacific Region except the Lao People's Democratic Republic. French Polynesia, Nauru, Niue, New Caledonia and Papua New Guinea are the only Pacific island countries and areas to screen for hepatitis C. The screening test for hepatitis C is currently expensive and this explains why not all countries routinely screen for HCV. There remains a need for a sensitive, specific, simple, affordable and cost-effective test for hepatitis C that can be used in resource-limited countries.

The target of 100% voluntary unpaid and regular donors has been reached in Australia; Hong Kong, China; Japan; Malaysia; New Zealand; the Republic of Korea; and Singapore. However, most countries and areas still pay blood donors. In the Philippines, the phasing out of commercial blood banks has progressed well during the last 12 months, and in China a "Blood Donation" law was passed on 1 October 1998 forbidding payment to blood donors.

2.3 Hepatitis B and C transmission among injecting drug users

Hepatitis B and C can both be transmitted through blood and use of contaminated needles is an important mode of transmission. For this reason, hepatitis C, which is primarily spread through bloodborne transmission, can infect large numbers of injecting drug users (IDUs).

In Australia, hepatitis C prevalence among IDUs is estimated to be between 60% and 80%. Some estimates of hepatitis C prevalence among IDUs in Thailand are as high as 90%. Unfortunately,

hepatitis C prevalence data from many Member States of the Region are lacking. However, it is likely that many countries have similar prevalence rates to those in Australia and Thailand. Although hepatitis B prevalence is typically lower than hepatitis C prevalence, it also constitutes a serious health problem among IDUs.

2.4 Clinical treatment

Currently there are no general protocols providing guidelines on diagnosis, clinical management and treatment of patients with viral hepatitis or subsequent chronic liver disease. The existing clinical practices for management of patients with acute hepatitis, chronic hepatitis, cirrhosis, and hepatocellular carcinoma are not standardized.

In recent years antiviral drugs (interferon, lamivudine, and ribavirin), anti-inflammatory drugs, vaccine therapy, and certain traditional medicines have all been used to treat patients with chronic hepatitis due to HBV and HCV, with variable success. Further studies are needed to identify the most appropriate treatments for patients with chronic hepatitis, before their widespread use can be encouraged.

3. FUTURE

In December 1998 a meeting of the Western Pacific Region Working Group on Viral Hepatitis reviewed the current situation of viral hepatitis and identified priorities for action. The Working Group recommended that the following priority areas be addressed.

3.1 Continued promotion of immunization for Hepatitis B control

WHO should concentrate on ensuring the achievement and maintenance of high immunization coverage in all countries and areas of the Region. This would include facilitating introduction of hepatitis B vaccine in Cambodia and the Lao People's Democratic Republic. Attention should be paid to sustaining vaccine supply for countries dependent on partner agency sources. Although 11 countries dependent on partner agencies currently have adequate vaccine supplies, in the longer term these supplies must be sustained by national funds.

3.2 Improvement of blood safety

In order to improve blood safety, WHO should continue to focus not only on screening and quality assurance in laboratories, but on all the steps in the transfusion chain between the donor and the recipient. Governments should be encouraged to support their own national blood programmes to operate well-organized and cost-effective blood services and to regulate all the activities related to the use of human blood. This would include collecting blood only from voluntary and non-remunerated donors, establishing self-sufficiency, using blood and plasma derivatives effectively and reducing the number of unnecessary transfusions. Through its network of collaborating centres, WHO should work together with countries to identify and characterize serum panels and standardized reagents for the licensing of screening tests that are appropriate for each country's situation.

3.3 Continued monitoring of the epidemiological situation of viral hepatitis

The epidemiological situation of viral hepatitis should continue to be closely monitored, not just for hepatitis B and C but also for hepatitis A and E and other, newly emerging, hepatitis viruses. This information would be used for planning at national and regional levels to address viral hepatitis control issues.