Surveillance systems, measurement and reporting of Hepatitis A and B epidemiology

Results of the EUROHEP.NET feasibility survey

M.Kojouharova, A.Kurchatova, A.Minkova

National Center of Infectious and Parasitic Diseases,
Dept. Epidemiological Surveillance and Early Warning, Sofia, Bulgaria

Objectives

- To give an overall picture of the existing surveillance systems for epidemiology of hepatitis A and hepatitis B in the participating countries.
- To study the feasibility to formulate guidelines to enable uniform measurement and reporting of the epidemiology.

Methods

- 20 countries (AT, BE, BG, CZ, EE, DE, GR, HU, IL, IT, LV, LT, LU, MT, NL, PL, RO, SK, SL, UK) participated in the EUROHEP.NET survey (2003) – NL only responded to the survey on hepatitis B.
- Based on the results of this survey, an overview and comparison between different surveillance systems for epidemiology of hepatitis A and hepatitis B was generated.
- Country-specific basic epidemiological data on hepatitis A and B epidemiology, obtained as a result of implementation of different surveillance systems, were analysed.
- The routinely collected surveillance data were analysed with regards to their comparability of measurement and reporting of hepatitis A and hepatitis B epidemiology.
- The basic components of the structure, process and outputs of the studied surveillance systems were compared and the feasibility of establishing a network for regular rapid and simple international exchange of public health information on hepatitis A and B, was evaluated.

Standards for surveillance of hepatitis A and B

Case definitions	Hepatitis A	Hepatitis B
EC case definitions	14/19	15/20
Other definitions	5/19	5/20
of them close to EC definition (for confirmed case)	3/5	2/5
planning to adopt EC case definitions	5/5	5/5

HAV outbreak definitions	Number of countries
2 and more epidemiologically linked cases	9/19
3 and more epidemiologically linked cases	4/19
more than 5 cases	1/19
1/3 of the members of the community or collectivity	1/19
any extreme incidence according to place, time/incidence higher than the average in a specified population and time/accumulation of cases in a specific time and location/ occurrence of cases with common source of infection and ways of spreading in a community or region	4/19

Viral hepatitis surveillance systems

Basic information on surveillance systems according to the responses of the countries		Number of countries VHA /19	VHB /20
1. viral hepatitis included in the national CD surveillance		19/19	20/20
2. type of the surveillance:	active	4	6
	passive	16	17
• mandatory		19	20
• voluntary		2	2
• sentinel		2	2
• laboratory		7	7
3. surveillance data based on:			
• reports of acute clinical cases		19	18
• hospitalization data		9	9
• laboratory reports		7	11
• registration of chronic HBV cases		NA	6
4. objects of the surveillance:			
• to detect outbreaks		19	20
• to monitor trends		19	20
• to monitor changes in disease distribution and spread		18	19
• to facilitate planning and control measures evaluation		18	19
• to improve knowledge on the disease epidemiology		18	20
5. type of data reported for surveillance purposes:			
• age and sex		18	19
• residence		19	19
• country of birth		8	8
• risk factors		17	16
6. clinical information:			
• symptoms		10	10
• date of onset		17	19
• hospitalization		15	17
• outcome		15	15
7. availability of surveillance data at the central level:		17/19	18/20
(National surveillance center and/or MoH)	individual data	13	14
	aggregated data	11	12
8. frequency of data reporting to the surveillance center:			
• continuously		9	10
• weekly		7	6
• monthly		6	6
9. frequency of data analysis at the surveillance center:			
• continuously		6	8
• weekly		5	7
• monthly		9	8
10. possibility for underreporting of cases		19	18

Age groups and age-specific incidence of hepatitis A and hepatitis B

- Age-specific incidence of hepatitis A: (available in 16 from 19 countries)
- Age-specific incidence of hepatitis B: (available in 14 from 20 countries)
- Varying age categories:

No age categories

Uniform age categories in the participating countries

Different age categories in the participating countries

Different age categories in years in the 20 countries in Europe

Countries	VHA /19 countries/	VHB /20 countries/
AT		
BE	<1/1-4/5-9/10-14/15-19/20-24/25-29/30-34/35-39/40-44/45-49/50-54/55-59/60-64/65	
BG	0-1/1-3/4-7/8-14/15-19/20-29/30-39/40-49/50-59/60+	0-1/1-3/4-7/8-14/15-19/2-29/30-39/40-49/50-59/60+
CZ	0/1-4/5-9/10-14/15-19/20-24/25-34/35-44/45-54/55-64/65+	0/1-4/5-9/10-14/15-19/20-24/25-34/35-44/45-54/55-64/65+
EE	0-1/1-4/5-9/10-14/15-19/20-24/25-29/30-34/35-39/40-44/45-49/50-54/55-59/60-64/65+	<1/1-4/5-9/10-14/15-19/20-24/25-29/30-34/35-39/40-44/45-49/50-54/55-59/60-64/65+
DE	<1/1-4/5-9/10-14/15-19/20-24/25-29/30-34/35-39/40-44/45-49/50-54/55-59/60-64/65+	<1/1-4/5-9/10-14/15-19/20-24/25-29/30-34/35-39/40-44/45-49/50-54/55-59/60-64/65+
GR		
HU	0/1-4/5-9/10-14/15-19/20-24/25-29/30-34/35-39/40-44/45-49/50-54/55-59/60-64/65+	0/1-4/5-9/10-14/15-19/20-24/25-29/30-34/35-39/40-44/45-49/50-54/55-59/60-64/65+
IL	0/1-4/5-9/10-14/15-44/45-64/65+	0/1-4/5-9/10-14/15-44/45-64/65+
IT (1)	0-14/15-24/>24	0-14/15-24/>24
IT (2)	0-14/15-24/25-64/65+	0-14/15-24/25-64/65+
LV	<1/1-6/7-14/15-17/18-29/30-39/40-49/50-59/60+	<1/1-6/7-14/15-17/18-29/30-39/40-49/50-59/60+
LT	0-1/1-2/3-6/7-9/10-14/15-19/20-29/30-39/40-49/50-59/60+	0-1/1-2/3-6/7-9/10-14/15-19/20-29/30-39/40-49/50-59/60+
LU		
MT	0-1/1-11/12-18/19-34/35-64/65+	
NL		
PL	0/1-4/5-9/10-14/15-19/20-24/25-29/30-34/35-39/40-44/45-49/50-54/55-59/60-64/65+	0/1-4/5-9/10-14/15-19/20-24/25-29/30-34/35-39/40-44/45-49/50-54/55-59/60-64/65+
RO	<1/1-4/5-9/10-14/15+	<1/1-4/5-9/10-14/15+
SK	0/1-4/5-9/10-14/15-19/20-24/25-34/35-44/45-54/55-64/65+	0/1-4/5-9/10-14/15-19/20-24/25-34/35-44/45-54/55-64/65+
SL	0-1/1-11/12-18/19-34/35-64/65+	0-1/1-11/12-18/19-34/35-64/65+
UK	0/1-4/5-9/10-14/15-19/20-24/25-29/30-34/35-39/40-44/45-49/50-54/55-59/60-64/65+	<1/1-4/5-9/10-14/15-24/25-34/35-44/45-54/55-64/>=65

Discussion

- The hepatitis A and hepatitis B surveillance systems are included in the national surveillance of the participating countries and most of the countries evaluate the existing mandatory systems as most reliable.
- In the majority of the countries the surveillance is passive and the surveillance data are based mainly on reports of acute cases.
- Surveillance data are available at the central level (MOH, National surveillance centre) as individual and/or aggregated data, which is a prerequisite for establishing a network for exchanging epidemiological information.
- Potential obstacles are related to the existing differences concerning case definitions, hepatitis A outbreak definition, variety in age categories used for surveillance purposes and the frequency of data reporting and analysis at the central level.
- A diversity of national data are now available as a result of implementation of different surveillance systems. This has made the comparative analysis of the country-specific hepatitis A and hepatitis B epidemiology unreliable.
- The adoption of EC case definitions implemented by the majority of countries would facilitate the standardization of the epidemiological information. Uniform measurement and reporting of hepatitis A and hepatitis B is possible on the basis of the existing national surveillance systems on condition that certain modifications are introduced according to guidelines.