USE OF ACUTE HEPATITIS SURVEILLANCE TO EVALUATE PROGRAM FOR VIRAL HEPATITIS PREVENTION AND CONTROL

Central Asian Program, DIH, EPO, CDC



GNP/capita (USD) 1994-2000

Country/Years	1994	2000	GNP
		(estimate	increase
		for 2002)	
Kazakhstan	721	1230	70.6%
Kyrgyzstan	275.3	286	4%
Tajikistan	159.1	159,8	0.4%
Turkmenistan	517	552,5	6.9%
Uzbekistan	255.4	264,3	3.4%

European Bank for Reconstruction and Development. Transition Report Update, May 2002.



Aims:

- To evaluate parenteral hepatitis risk factors
- To assess an impact of universal newborn Hepatitis B immunization program



Materials and Methods (1)

- Study design: matched case control study (1 case + 2 controls matched by age, sex and place of residence)
- Cases: acute hepatitis B, C and D cases (parenteral hepatitis), 2000-2003
- Controls: acute hepatitis A cases, 2000-2003
- N = 214 case-control sets
- EPI INFO matched case-control analysis followed by conditional logistic regression



Risk Factors

(6 months prior to the onset of disease)

- Blood transfusion
- Surgery
- Injections in hospital
- Injections in polyclinic
- Blood samples collection in polyclinic
- Visit to surgeon, dentist, urologist, gynecologist
- Blood donation
- Multiple sexual partners
- STD



Risk Factors of Parenteral Hepatitis (monovariable analisys)

Факторы риска	Frequency (N=642)		OR	Confidence interval Clo.95	P value
	Cases Controls				
Blood transfusion	5.6%	0.2%	24.0	[3.1; 184.6]	<0.001
Injections in hospital	5.6%	0.9%	7.6	[2.1; 27.6]	<0.001
Injections in policlinic	22.0%	7.2%	3.5	[2.1; 5.8]	<0.001
Surgeon	7.0%	1.6%	4.8	[1.9; 12.6]	<0.001
Multiple sexual partners	4.7%	1.4%	8.7	[1.8; 41.9]	<0.05 C

CONTROL AND PREVENTION

Risk Factors of Parenteral Hepatitis(2)

Risk factors	βí OR=e	Confidence interval Clo.95	P value
Blood transfusion	11.4	[1.3; 99.7]	<0,05
Injections in hospital	3.2	[2.0; 5.9]	<0,001
Injections in policlinic	5.7	[1.1; 15.9]	<0,001
Surgeon	1.1	[0.2; 5.4]	>0,05
Multiple sexual partners	5.2	[1.5; 17.6]	<0,01



Conclusion

- Risk of parenterally transmitted viral hepatitis remains significant in health facilities. The system of blood and injection safety should be improved
- The system of health communication and training to improve understanding of natural Hep B transmission mechanisms and prevention measures should be strengthened (+HIV)



Hepatitis B Immunization Program in Kyrgyzstan

- Introduced in April 1999
- High immunization coverage > 95%
- 23 cases of acute HB among fully immunized children registered by routine surveillance







Materials and Methods (2)

- Comparison of acute hepatitis B incidence rates among vaccinated and unvaccinated children born in sentinel sites between 2000 and 2003
- Analyses of acute hepatitis B incidence among children under 5 years of age in sentinel sites for the period 2000 to 2003
 - Hepatitis B cases: acute hepatitis sentinel surveillance database
 - Vaccination status of acute hepatitis B cases: primary health facility immunization records
 - Number of children in age groups and vaccination status of non-infected children: official statistical data of the Ministry of Health



Acute Hepatitis B Cases Among Children Under 4, Sentinel Surveillance, 2000-2003

Sentinel sites	Number of children under 4	Children born after April 1999	Children fully immunized
Bishkek	15	4	0
Dzalal-Abad	33	9	2
Naryn	5	1	0
Total:	53	14	2

CENTERS FOR DISEASE CONTROL AND PERVENTION

Incidence rates among vaccinated and unvaccinated children, Bishkek, Naryn, Jalalabat, 2000-2003

Number of children born in 2000-2003	37 784
Number of fully vaccinated children	37 112
Number unvaccinated children	672
Number of acute HB cases among vaccinated children	2
Number of acute HB cases among unvaccinated children	12
Incidence rate among vaccinated children	2.9 per 100,000 child- years
Incidence rate among unvaccinated children	760.0 per 100,000 child-years

CDC CENTERS FOR DISEASE

Acute Hepatitis Incidence Among children under 5, 2000-2003



CENTERS FOR DIBEASE

Conclusions (1)

- AHSS allows effective MONITORING of immunization program, providing the ability to:
 - carry out epidemiological investigation of every case of acute viral Hepatitis B
 - identify and quickly respond to immunization program errors



Conclusions (2)

KAHSS provides:

- the ability to EVALUATE the impact of an immunization program
- An advocacy tool to support the necessity of sustainable immunization programs



Study Limitations

- Evaluation of risk factors:
 - Use of acute hepatitis A cases as controls;
 - Aggregation of acute hepatitis B, C and D cases into one group of parenteral hepatitis
- Evaluation of Immunization program:
 - Use of official statistical data to define the size of target age groups and vaccinated and unvaccinated children



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