

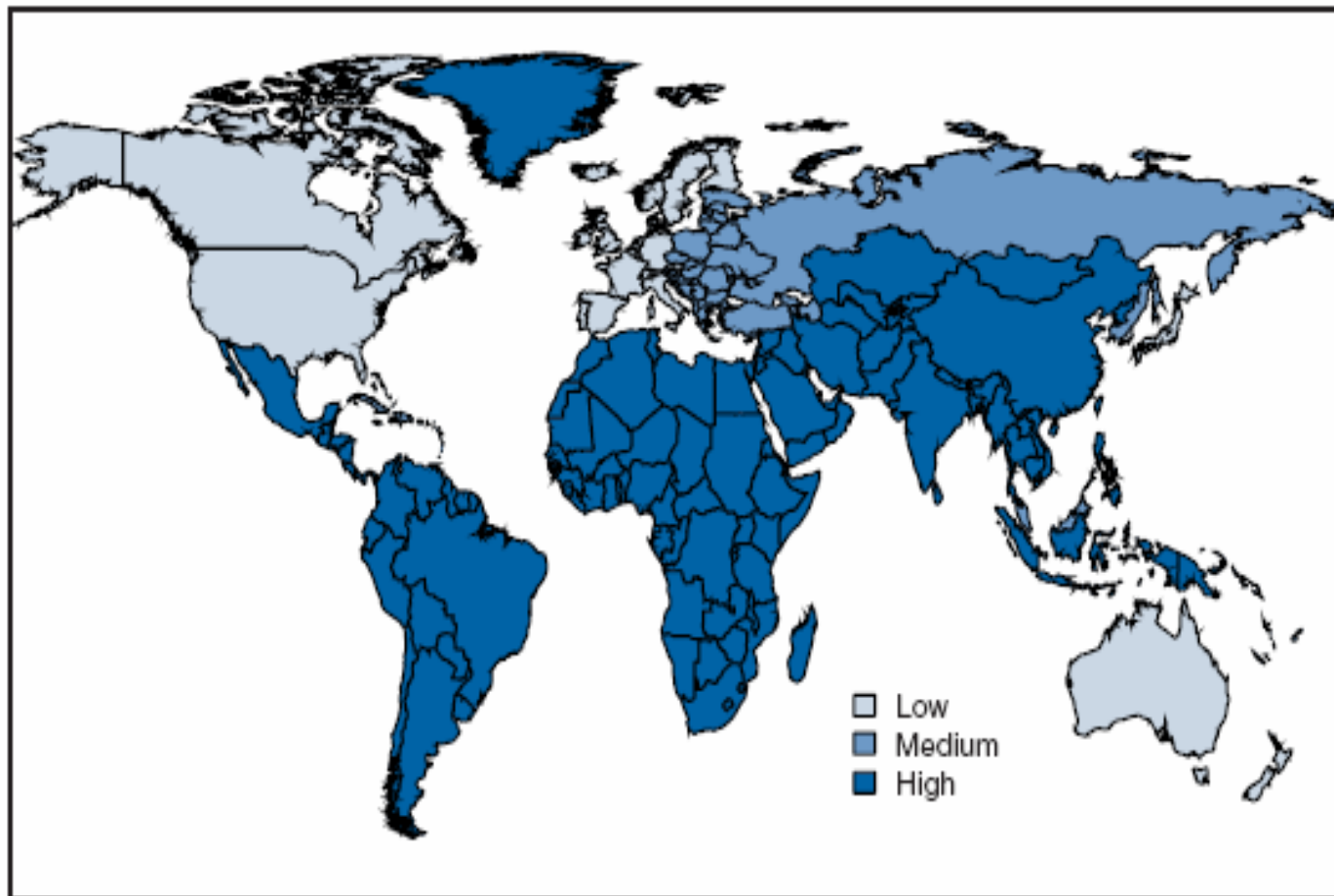
Epidemiology of hepatitis A and E in Greece

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Introduction

- Hepatitis A (HAV) is a vaccine preventable disease with changing epidemiology over the past decades.
- In Greece, the vaccine has been available and recommended but no universal mass vaccination has been implemented as yet.
- Although hepatitis A is a reportable disease, there is significant under-reporting and no reliable National data on disease burden.

FIGURE 4. Geographic distribution of hepatitis A endemicity, 2005*



* For multiple countries, estimates of prevalence of antibody to hepatitis A virus (anti-HAV), a marker of previous HAV infection, are based on limited data and might not reflect current prevalence. In addition, anti-HAV prevalence might vary within countries by subpopulation and locality. As used on this map, the terms "high," "medium," and "low" endemicity reflect available evidence of how widespread infection is within each country rather than precise quantitative assessments.

Hepatitis A and travel recommendations



Figure 1 Summary of expert panel country-specific recommendations for hepatitis A immunization.

Prevalence of anti-HAV antibodies in Greek children and young adults

Authors	Year	No of subjects	Age (y)	%anti-HAV (+)
Papaevangelou and Frosner	1978	83	10-19	52
Mavromichalis et al	1983	155	10-19	40
Mavromichalis et al	1984	129	10-14	32
Kremastinou et al.	1985	436	10-19	11
Mavromichalis et al	1988	116	10-19	20
Arvanitidou et al	1989	255	6-14	1.6
Mamasi et al	1989	478	10-15	13.4
Mamasi et al	1989	115	16-20	27.8
Basoukou P. et al	1990	593	10-20	16.2

Basoukou P. et al. Acta Microbiol Hell 1990

Seroepidemiology of hepatitis A in northern Greece

- Urban: 11.9% versus rural: 20.8%
- Increased prevalence with age:
 - 11.4% in 10-15 y.o.
 - 15% in 13-15 y.o.
 - 27.8% in 16-20 y.o.

Changes in the epidemiology of acute hepatitis A

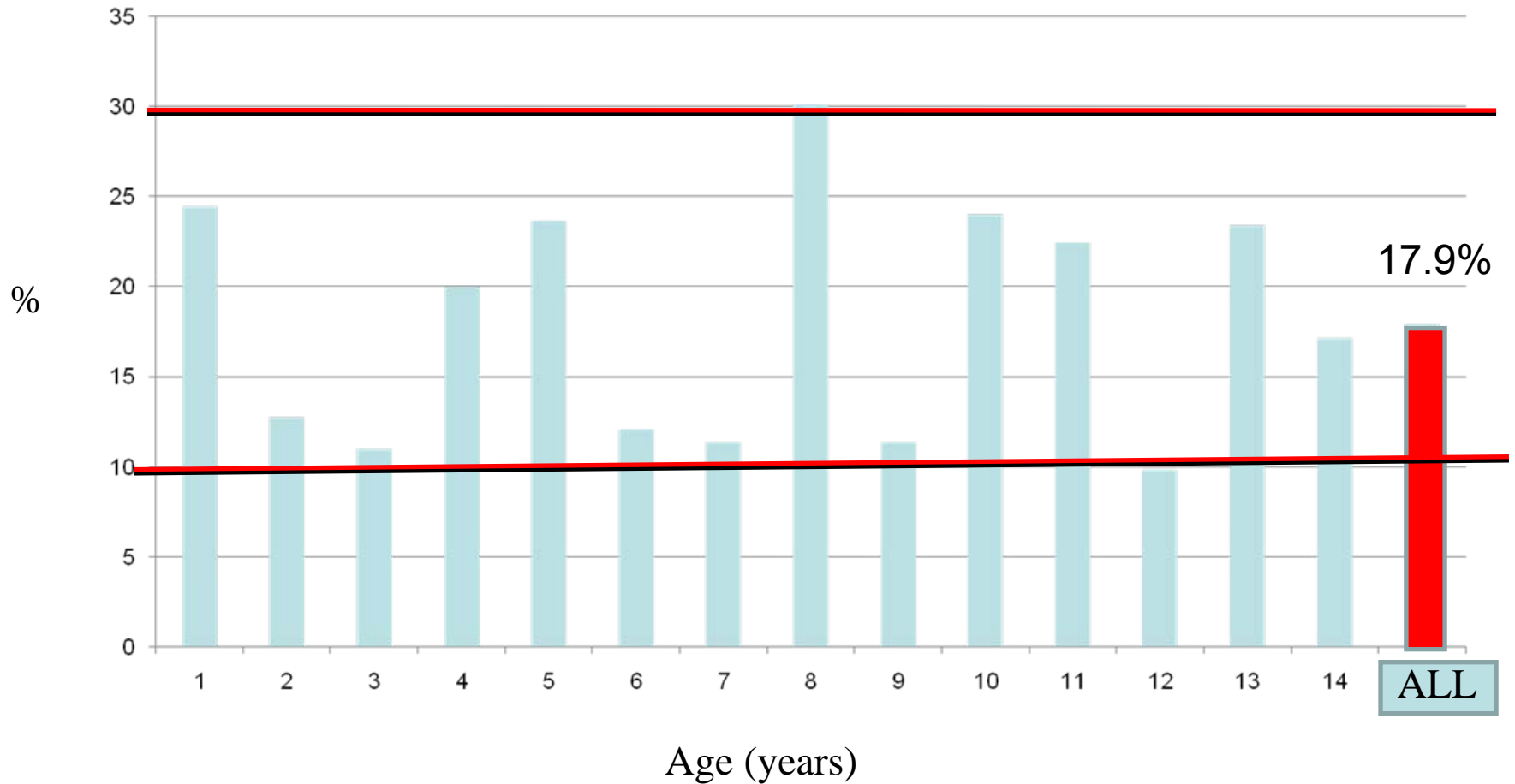
- Retrospective data from Infectious Disease Hospital of Salonica between 1985-1992.
- Total acute hepatitis A admissions: 624 (385 children).
- In pediatric clinic, significant decrease in the annual number of admissions from 400-700 in 1970's to <50 in late 1980's.
- Mean age upon admission was increased by 6.5 yrs.
- Mode value of age shifted from 1-5 y.o. in 1985 to 21-25 y.o. in 1992.

Seroepidemiology of HAV in children 0-14 y.o. living in Greece

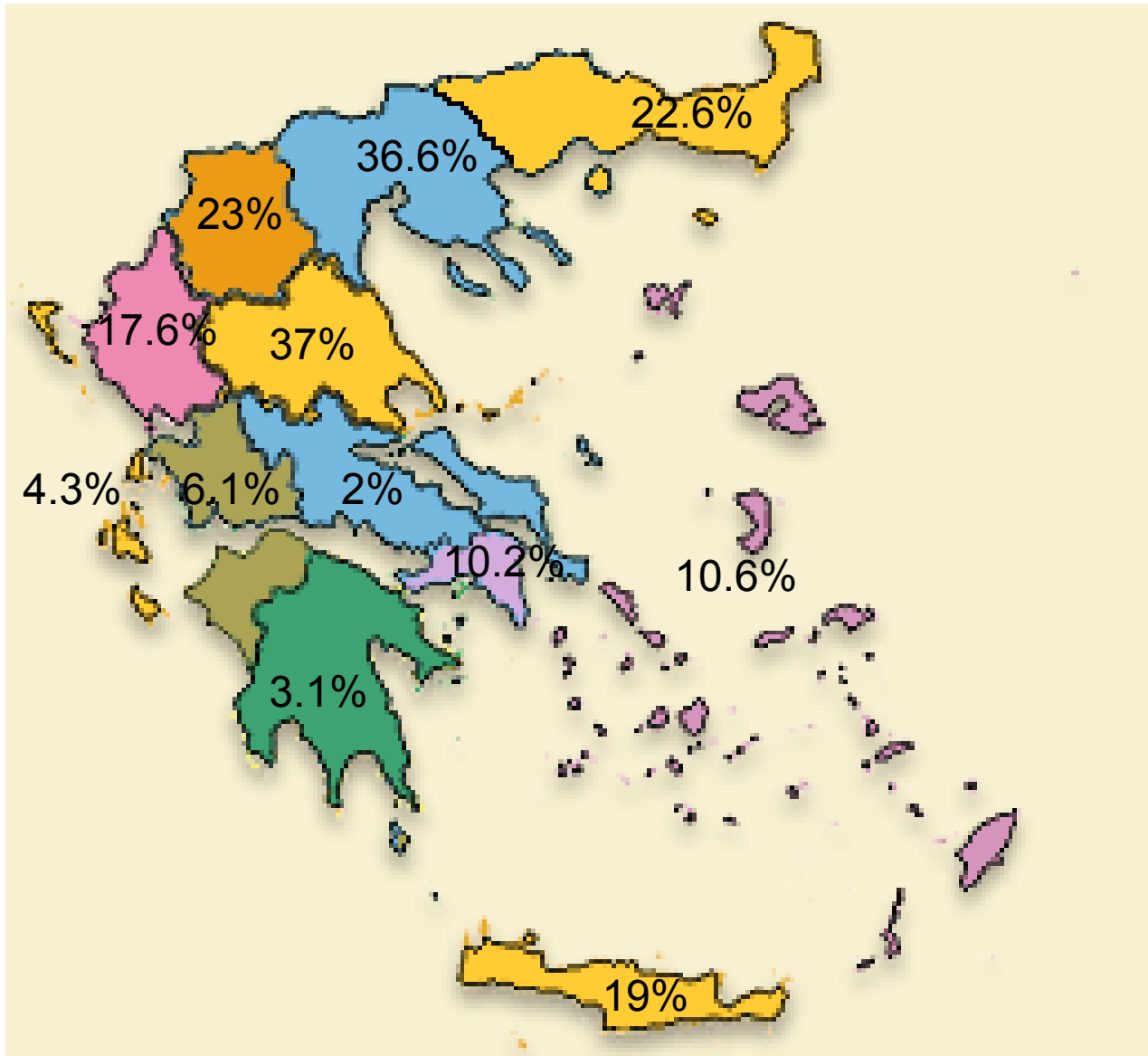
- 100 sera/year of age were collected, stratified by geographic region (Essen II methodology).
- Demographic data and documented vaccination against hepatitis A was entered in a specially designed anonymous database.
- Sera were tested for the presence of anti-HAV IgG antibodies (AXSYM, Abbott Laboratories).
- **32%** of children had been vaccinated.

Results

Natural immunity in unvaccinated children >1 y.o.



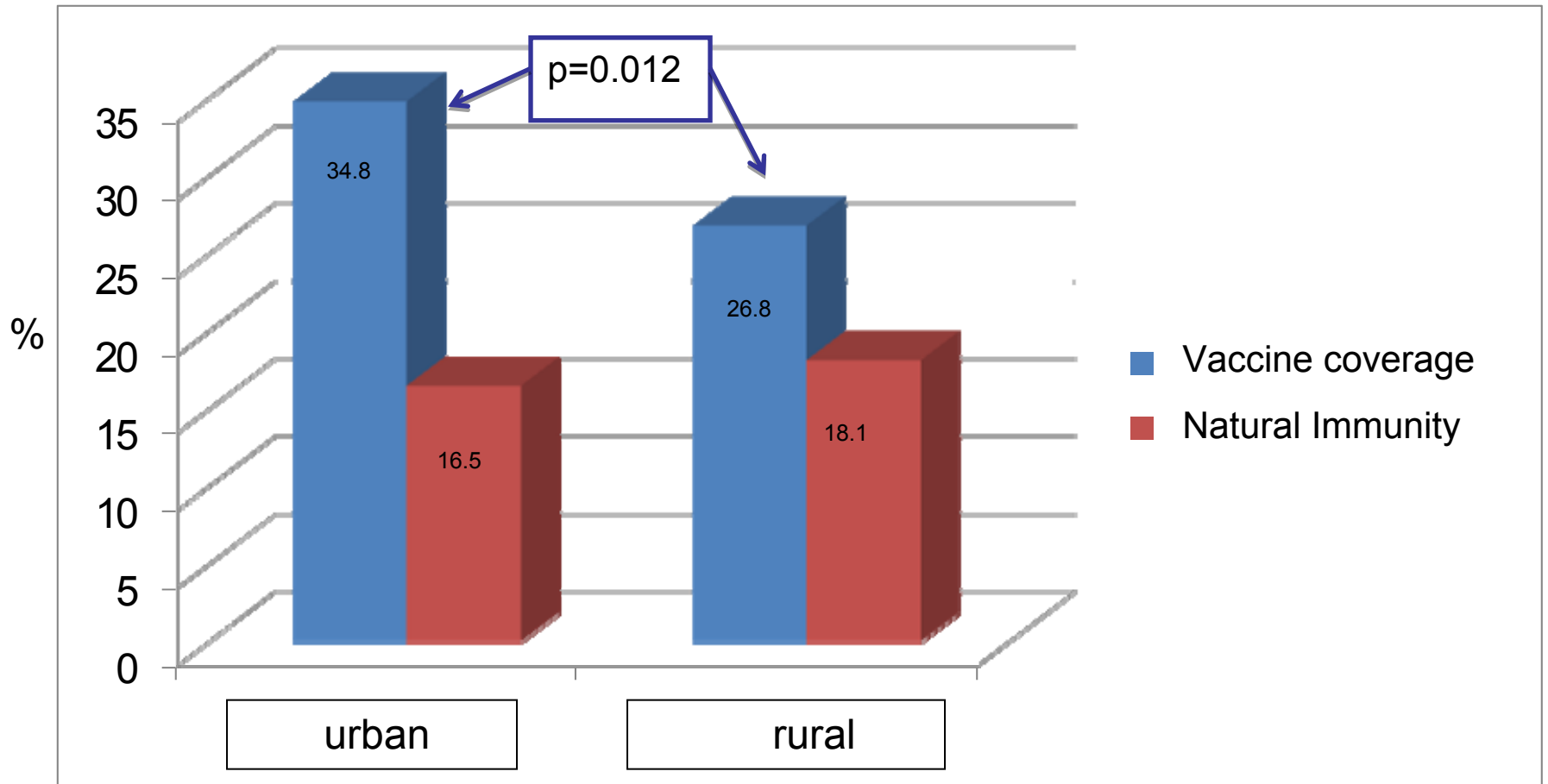
Natural immunity



Total = 17.9%

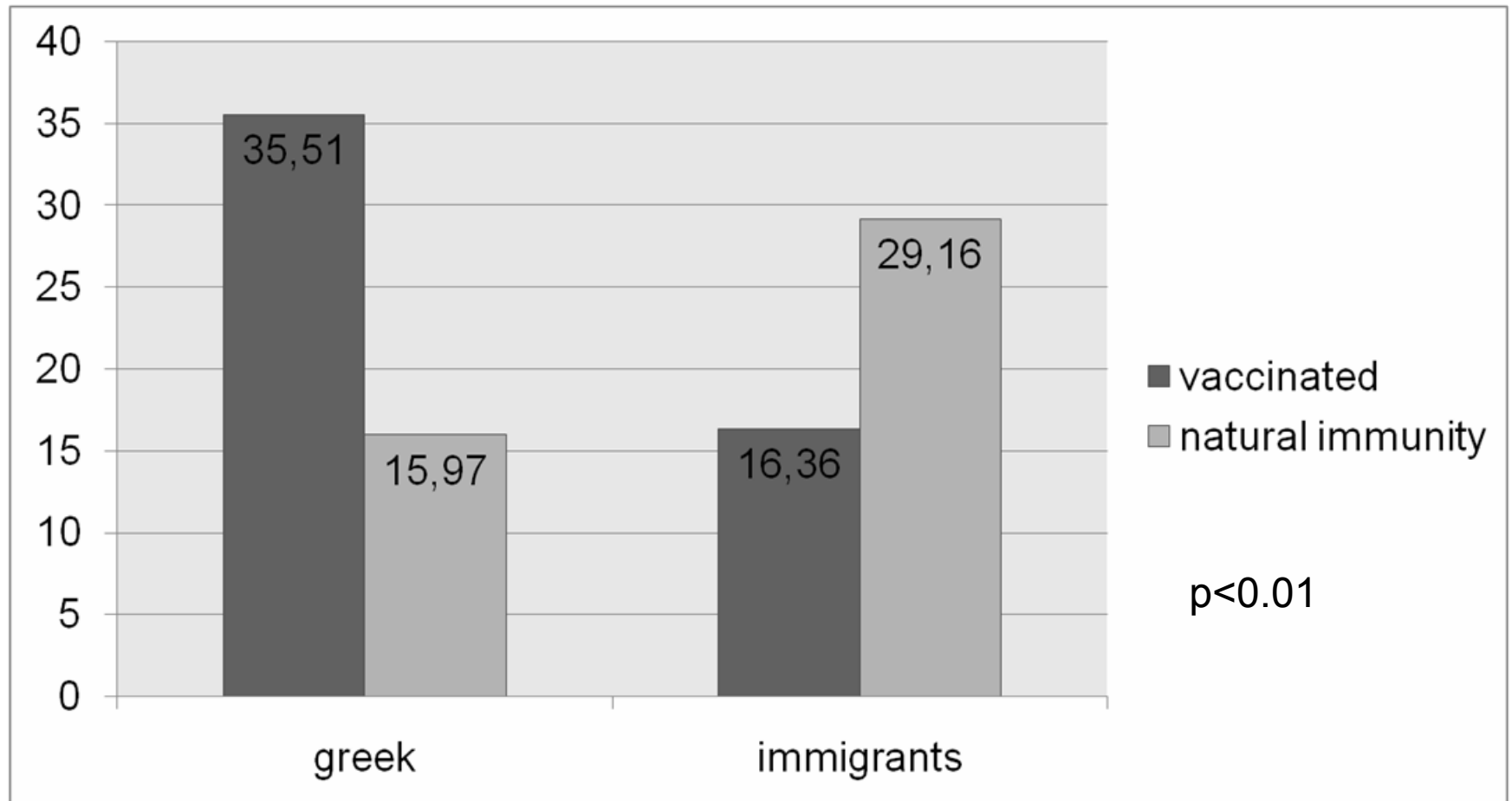
Greek in Attika } 5.1%

Urban versus rural areas



Results 3

Hepatitis A and ethnicity



Conclusions

- One third of children is already vaccinated.
- Although this study has limitations since:
 - sera were collected from Public Hospitals
 - In this cohort ~18% were immigrant children
- The implementation of universal vaccination against hepatitis A in Greece should be discussed since according to our results 17.9% of unvaccinated children have serologic evidence of past natural infection.

Epidemiology of hepatitis E

- Little epidemiologic data.
- HEV is the main etiologic agent of enterically transmitted non A-B-C hepatitis.
- Only one center (Salonica ID Hospital) performs antibody testing.
 - 2004-2006: 210 samples of acute non A-B-C hepatitis
 - 4 (2%) anti-HEV(+); 3 adults from India and 1 Greek with no travel history.

HEV in people at high risk for non-A, non-B hepatitis and STD's

- Anti-HEV antibodies were measured in:
 - 125 thalassemia patients
 - 300 IVDU's
 - 263 people with STD's
 - 47 HIV(+) MSM
 - 316 healthy volunteers

Prevalence of anti-HEV antibodies in high risk patients

	Anti-HEV (+)
– 125 thalassemia patients	2.4%
– 300 IVDU's	1.7%
– 263 people with STD's	1.5%
– 47 HIV(+) MSM	2.1%
– 316 healthy volunteers	2.2%

- No association between anti-HEV and anti-HCV or anti-HBc.

Anti-HEV prevalence data from Northern Greece

- Anti-HEV antibodies were measured in:
 - 2,636 Healthy blood donors
 - 350 refugees from Albania
 - 165 children
 - 65 IVDU's
 - 75 chronic viral hepatitis patients
 - 149 hemodialysis patients

Anti-HEV prevalence data from N. Greece

	Anti-HEV (+)
– 2,636 Healthy blood donors	0.23%
– 350 refugees from Albania	4.85%
– 165 children	0
– 65 IVDU's	0
– 75 chronic viral hepatitis pts	5.3%
– 149 hemodialysis patients	1.34%

Data from hemodialysis patients

- Report from Agrinion Unit: **9.7%**(6/62).
- Report from Central Greece(5 units): **4.8%** (1.8-9.8%)
- Multicenter hemodialysis cohort study:
 - 27/420 (**6.4%**) anti-HEV(+) antibodies*
 - Association with age (RR=1.03, p=0.024)
 - Higher prevalence in females
 - No association with anti-HCV or anti-HBc
 - Duration of hemodialysis (p=0.07)

*Controls: 2.2%

Dalekos G, et al. Transfusion 1998

Psichogiou M, et al. Nephrol Dial Transplant 1996

Epidemiology of HEV in Greece

- Few data exists
- No evidence of endimicity
- No data on environmental specimens