

# Viral Hepatitis Prevention Board

## **Burden and prevention of hepatitis in Turkey**

**ISTANBUL, TURKEY  
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# Objectives

- Provide an overview of surveillance systems for infectious diseases
- Review the epidemiology of viral hepatitis in Turkey
- Give an overview of current measures to prevent and control viral hepatitis
- Discuss progress in prevention 10 years after the introduction of universal hepatitis B vaccination
- Review implementation of new prevention strategies, control measures and monitoring systems
- Discuss the way forward – lessons from success and possible obstacles

# General observations

## Country specificities:

- HBV vaccination introduced in 1998
- epidemiologically, geographically and culturally heterogeneous
- large, young population
- compulsory military service provides unique access to epidemiological data
- Screening tests for HIV and viral hepatitis for couples before marriage
- Blood banking system in midst of major reorganization
- Route for trafficking and drug transit

# General observations

- Excellent progress being made in prevention and control of viral hepatitis
- Great interest in area, high-quality and considerable body of literature
- Good data, e.g. molecular epidemiology, but:
  - results are at an early stage for application in public health
  - lack of population-based data (first major study ongoing)
- Expertise, tools and networks available in islands of excellence
- Welcome participation of major parties: MoH, academe, hospital-based researchers, NGOs, but possibly not fully representative
- Mixed public-private health sector

# Surveillance

New system introduced in 2005 (a "revolution")

- Builds on and improves previous electronic system
- Now covers 51 communicable diseases, including acute viral hepatitis
- Standardized case definitions and laboratory confirmation
- Sentinel surveillance for selected diseases introduced
- Guidance issued (including rationale for and types of surveillance)
- Dissemination of findings limited and delayed; annual publication

# Epidemiology

## Hepatitis A

- Most common acute viral hepatitis in children
- Intermediate endemicity at national level, but west/east gradient, highly endemic among young children in east/south-east
- All viruses genotype 1 (mostly 1B)
- Changing epidemiological pattern (including eating habits), with increasing numbers of susceptible people; poor sanitation remains an issue
- Migration and movement of people – important factors
- No immediate plans for universal vaccination, but vaccination of selected risk group and on basis of geographical distribution being considered

# Epidemiology

## Hepatitis B and D

- Leading cause of chronic hepatitis and hepatocellular carcinoma; main reason for liver transplants
- Most virus isolates genotypes D1 but genotype A1 and B reported
- Steady decline in prevalence but country remains with intermediate endemicity, and regional differences (west/east and south-east gradient)
- Decreases in HBsAg positivity in children, blood donors and health-care workers
- One estimate indicates 3 million people HBsAg positive and 300,000 with active hepatitis but only 30,000 under therapy

# Epidemiology

- Hepatitis D still important although decreasing in prevalence
- Only genotype 1 detected so far
- Divergence in strains isolated



# Epidemiology

## Hepatitis C

- Most studies done on blood donors
- Gradual slow decrease in recent years (to 0.2-1.1%)
- West/east gradient seen in general population (0.17-2.8%) but not in blood donors; prevalence increases with age
- Significant decrease in haemodialysis patients
- Genotype 1 predominant, but type 2, 3 and 4 viruses detected; genotype distribution unchanged over years
- Main risk factors are low socioeconomic status, history of multiple blood transfusions, hospitalization and surgery; data on IDU lacking

# Vaccination policies

- Hepatitis A – no policy
  - Consideration of decision to vaccinate against hepatitis A in relation to the assumption that infants in eastern Turkey are all infected in first year of life: This assumption should be verified as most children in these areas are protected during the first year of life through maternal anti-HAV antibodies (placental transfer)
  - Draw on other countries' experience
  - Vaccination may be justified - cost-effectiveness studies needed
- Hepatitis B – vaccine introduced in 1998 and policy revised in 2000:
  - Newborns and infants 0-11 months
  - Risk groups
  - Catch up for adolescents; all children up to age of 16 years have been targeted by the programme
  - Free for infants and risk groups
  - Birth dose introduced into immunization calendar; coverage data needed
  - Good infant coverage (>90%)
  - Data need for vaccination coverage of adolescents and adults at risk
  - Good prices negotiated with manufacturers and considerably expanded MoH budget for vaccination

# Blood screening

- New law 2007 – transformation of organization to create regional blood banks, transfusion centres in hospitals and blood collection centres; improved screening tests (e.g. NAT) being considered
- No paid donation, all voluntary (family recruitment)
- Standardized donor assessment
- Majority of donors first time donors
- Decreasing rates of HBsAg (possibly due to better education, raised awareness and donor assessment) but steady rates of anti-HCV

# Transplantation

- Some 400-500 liver transplants a year; data presented from one major centre only
- HBV and HDV main reason (two thirds) for liver transplants
- Post-transplant survival greatly improved for hepatitis B with HBIG and lamivudine prophylaxis; no consensus of dose or duration of treatment
- No major improvement in post-transplant survival of HCV-infected patients
- Advances in treatment (e.g. lamivudine + adefovir for HBV, and IFN/ribavirin for HCV)

# Health-care workers

- High exposure rates, risks with surgery and for nurses
- Seroprevalence rates comparable to those in general healthy population and decreasing; increasing rate of vaccination
- Need for education, training in universal precautions, and vaccination
- No overall responsibility for occupational health, despite laws and international guidelines
- Need for decision-making process at ministry level
- Consideration should be given to screening and vaccination of all HCWs, starting with students
- Need resources to apply safe injection practices (WHO Safe Injection Global Network)

# Lessons learnt and considerations

- Hepatitis A generally perceived as not serious
- Modest vaccination coverage can result in large decreases in incidence
- Hepatitis B: no evidence to change view that vaccine-escape mutants are a public health problem
- Hepatitis D: epidemiology follows that in other countries where D was a problem, declining as prevalence of B does (although reason not known); treatment difficult
- Epidemiological studies and standardized surveillance data are needed
- A large proportion (maybe as high as 90%) of patients with active chronic hepatitis are not being treated and many people probably do not know that they have a disease
- Health care available for chronic hepatitis
- Substantial knowledge base about viral mutants in chronic hepatitis patients and more information needed about implications for treatment
- Role of NGOs and patients' organizations
- Published literature on incidence or prevalence not representative at the national level

# Lessons learnt and considerations

## Hepatitis A

- overcoming social (including educational levels) obstacles and misconceptions
- Need for data on incidence and outcome of fulminant hepatitis A
- need for continuing improvements in sanitation
- competing priorities (other vaccine-preventable diseases, pandemic influenza etc)

## Hepatitis B

- Continued evolution of guidelines for treatment of chronic hepatitis B
- Continuing need to reach health-care workers and other risk groups with vaccine
- Controversy about first-line treatment with lamivudine and whether to progress to more powerful drug; issues of resistance and cost

## Hepatitis C

- Resolve issue about whether decision to treat depends on degree of fibrosis

# Lessons learnt and considerations

Quest for data generation seems to come from academics

Molecular epidemiological data limited

Donor screening stated to be effective

Lack of W/E gradient in HCV prevalence in blood donors indicates that screening procedures are effective

Markov modelling valid and useful provided that input data are of assured quality



# Needs and proposed steps forward

- Improve access to collected data and results of analyses, with feedback to field workers and the public
- Data need to be representative, validated, and form the basis for public health action
- Calculate disease burdens from data already collected and use in modelling exercises
- Monitor disease trends over time
- Identify risk factors, including proportional contribution (attributable fraction)
- Include chronic viral hepatitis as a separate entity for surveillance
- Evaluate the surveillance system and adjust as necessary

# Needs and proposed steps forward

- Capacity building (surveillance, care, treatment, occupational health, and other areas)
- Strengthening of evidence-based decision-making and processes for allocation of resources using data
- Evaluation of the effectiveness of public health interventions (vaccination, screening, injection safety, infection control, promotion of safer sex, counselling and treatment) and revision of programmes accordingly
- Hepatitis A: consideration may be given to long-term goal of vaccinating all young children at or after age of one year
- Greater insight into IDU – more studies

# Needs and proposed steps forward

- Hepatitis B: consider expanding screening of adults in order to identify people in need of treatment
- Hepatitis B and C:
  - comparative data for different groups of health-care workers needed
- Blood banks: evaluate introducing NAT screening (automation could yield savings) which could reduce transmission of HBV further
- Need to increase number of regular repeat volunteer blood donors

# Recommendations

- Strengthen epidemiology (e.g. determine attributable fractions, aggregated data) and use surveillance data as basis for a national plan of action
- Better communication and networking between leading academic and public health institutions
- Improve planning and control of risks in health-care settings, given that risks are recognized
- Build up the public health aspects with a focus on control, including NGO-government liaison as in the area of work against trafficking
- Consider policy options for use of hepatitis A vaccine

# Recommendations

- Mandatory screening and vaccination of health-care workers, preferably before they start their education
- High-level coordination of programmes and projects to prevent and control viral hepatitis; consider creation of a task force, at ministry level, composed of all national stakeholders
- Prepare a comprehensive national strategy and plan for the prevention and control of viral hepatitis, including the goal of controlling hepatitis B, in coordination with all interested parties