

Prevention of viral hepatitis in Germany and Scandinavia

Viral Hepatitis Prevention Board

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Aims and objectives

- Epidemiological update
- Review of surveillance systems for infectious diseases and monitoring of adverse events after hepatitis vaccination
- Evaluation of prevention and control
- Lessons learnt

Contrasts within and between Nordic countries

- Medical professionals - politicians (policy)
- National policies - immunization and vaccination (Norway vs Sweden)
- Social approaches (liberal to restrictive)
- Regional variations (Nordic countries/European Union)
- Costs: Selective policy vs universal vaccination programme
- Former low prevalences, now no longer lowest rates

Epidemiology - Nordic countries

- Hepatitis A

- low immunity in people aged up to 55 years (Sweden) - early improved sewerage systems
- no longer considered in icteric patients
- steady decline apart from outbreaks in IDUs (age distribution supports this picture; spread to family contacts); microepidemics
- impact of introduction of vaccine unclear
- most infected abroad (Sweden), but some cases in young children may be domestic (as in Germany)
- Travel the main risk (not Africa), with less risk on visits

Epidemiology - Nordic countries

- Hepatitis B - sporadic outbreaks in IDUs in all countries except Iceland; largest outbreaks in Norway and Finland - cases of hepatitis B also seen in sexual partners
- No change in HIV pattern (except in Finland)
- Outbreaks match increasing number of IDUs; drug-related deaths increase too
 - cases throughout Norway (only 6% of acute hepatitis B in Oslo in 2002)

Epidemiology - Nordic countries

- Consideration being given to vaccination of IDUs against hepatitis A and B
- Selective vaccination against hepatitis B in all countries: difference in reimbursement of costs

HBsAg⁺ children in day care centres - Sweden

- 1991 recommendations vague and unclear - variously implemented in different counties
- Limited problem
- High cost in contacting, informing and vaccinating (staff, family and children)
- Information (informed consent, anonymity, staff, parents)
- Universal immunization - may be the best option, and cost-effective

Nosocomial transmission of hepatitis B

- Improving situation (5 cases in 1997-2002)
- Extensive investigations into causes and prevention at high cost (55% for contact tracing and 17% for vaccination)
- Half the health care workers with needlestick injuries not vaccinated

Selective vaccination programme

Norway

- HBV carriers “confined to defined risk groups” and low prevalence
- Targeted programme with high priority to infants/children (especially with parents from countries outside the low endemic area), with free vaccine
- Coverage of family members difficult, given high mobility; but outreach to IDUs good

Issues

- Increasing hepatitis B rates, from lowest values in Europe; facing highly endemic neighbours to East - effect on policies
- Reporting systems (chronic/acute cases)
- Costs: selective vs universal vaccination
- Policy consequences for HBsAg+ children in day care - no care, no integration, harassment; equality of treatment for immigrants and refugees

Issues

- Selective immunization programme (Norway) reached only a small part of target population but good outreach to IDU population
- Impact of such a programme is difficult to evaluate
- Programme is controversial and out of step with current consensus; may not be cost-effective; exposure could have already happened

Issues

- IDU - harm reduction policies
 - provision of free needles/needle culture
 - prescription only access to equipment leads to black market
 - different strategies do not reflect HB incidence
- Liabilities (health care staff not vaccinated - Sweden)
- Vaccination: if a universal vaccination programme were started, there would still be a need for targeted campaigns aimed at risk groups
- Use of a hexavalent vaccine or a two-dose schedule may facilitate the decision-making process

Lessons learnt

- Nordic countries no longer lowest endemic area, and have higher disease burden of viral hepatitis than previously
- Many other countries have gone through similar experiences: beside cost-benefit consider social and political impact - need to avoid stigmatization of “risk groups” in order to foster integration into society

Lessons learnt

- Prevention
 - use appropriate social environment for advocacy and health promotion (e.g. imams for travellers and hepatitis A immunization)
 - perceptions count: hepatitis B not considered “serious” compared to HIV by IDUs (Norway); terminology: IDUs dislike “drug abuse” implying lack of control, perceptions of control
 - need to vaccinate health care workers

Lessons learnt

- Information - current awareness vital (e.g. small communities blind to problem, to counter anti-vaccine movement)
- Information needed in drug communities about seriousness of hepatitis
- Cooperation between social services, health authorities, treatment centres, prisons etc
- Higher the educational level of parents, the more difficult to convince about value of vaccination

Hepatitis A in Germany

- Notifiable disease; anonymized reporting at central level; improved since infection prevention law
- Law requires data on vaccination status; information on exposure may be provided (but good data on risks still lacking)
- Falling incidence for 20 years (more rapid in East than West); peaks at end of summers; West-East gradient with peaks in major cities; increasing with age
- Two thirds apparently acquired in Germany; contact tracing responsibility of local health department

Hepatitis B in Germany

- Notifiable disease; incidence rates and case numbers falling
- 2001: IfSG introduces surveillance case definition which requires data on vaccination status and is designed to facilitate reporting of risk factors, travel history, and hospitalization data
- Main risks 2002: heterosexual intercourse, IDU, homosexual intercourse, household contact
- Outbreaks, due to failures of infection control, especially in long-term care facilities and dialysis centres

Hepatitis B prevention

- 1983 STIKO recommendations (to *Länder* for publicly approved vaccinations - eligibility for state compensation) aimed at risk groups
- Experience - ignorance, poor coverage, safer sex (AIDS), most cases in general population - not targeted
- ANOMO study indicated massive underreporting: some 50,000 new infections per year and 500,000 carriers
- Basis for universal vaccination now hexavalent vaccine, with 80% coverage

Hepatitis B in Germany

- Vaccination: STIKO provides guidelines - since 1995, hepatitis B vaccination is standard for infants, children and adolescents as well as risk groups
- Vaccination coverage measured at school entry (6 years): 67% in 2002 and rising
- Hexavalent vaccines including hepatitis B are registered by the European regulatory authorities
- Escape mutants not a public health problem - yet; be aware: breakthroughs and reactivations possible

Monitoring adverse events

- Compensation scheme exists for vaccines recommended by regulatory health authorities
- Vaccinees have to initiate claim
- Vaccinating doctor obliged to inform about the scheme
- Infection Prevention Law details information required
- Paul-Ehrlich Institute responsible for monitoring

Hepatitis B: maternal screening

- 1984 regulation: test **all** pregnant women in certain risk groups, at 32nd week - but policy did not work: substantial proportion missed
- 1994: policy changed to screening of all women after 32nd week
- Efficacy studies (1 prospective): 20% not tested/results not available (cf only 5% for rubella), a minority with risk factors; 1% of pregnant women HBsAg+
 - = 1400 non identified, 250 infected newborns, 225 carriers
- Child has documentation booklet

Hepatitis B - who should be vaccinated?

- Immigrants - some with high rates of infection
- Heterogeneity of and within groups (practices etc), including travellers
- In general insurance companies do not cover for vaccination of travellers (hepatitis A and B)
- Hepatitis B: target “drug users” (not just IDUs) for earlier intervention; accelerated immunization schedule for travellers effective
- Transplant recipients - prepared to accept reactogenic new vaccine

Reaching adolescents

- Parents of adolescents ill-informed about hepatitis B; adolescents and teachers also
- Existing information, education and communication ineffective
- Future approaches:
 - lifestyle education
 - increase use of preventive examination at age 14
 - better use of IEC materials and contemporary media

Infektionsschutzgesetz (IfSG)

- New law, implemented in 2001, an improvement on the past, leading to better: coordination of early detection, case-based surveillance, prevention and control, etc
- Surveillance defined for 15 diseases and 47 pathogens
- Surveillance case definitions have to be used by health departments
- Reporting channels improved and speeded up; electronic data transmission and databases available at each level
- Weekly publishing of data; feedback (indirectly allows local health department to take any necessary action)
- Provision of supplementary information (e.g. reported risk factors) voluntary

Issues

- Maternal screening - despite requirement for testing all pregnant women, no test or results in 20% of women
 - question re birth dose of vaccine: rejected by STIKO - hexavalent vaccine at a few months more easily accepted; what vaccination schedule, who gives vaccine?
 - no follow up of family and household contacts (who identifies?)
 - HBIg: logistics/use for successful active immunization; medico-legal aspects of stopping
- Earlier screening in pregnancy (cf rubella)

Issues

- Risks - heterogeneity of groups, behaviours, practices
- Reliability of data - IDUs not always truthful (male prostitution, ...)
- Provision of data on reported risk factors not mandatory under IfSG but voluntary
- Data protection
- New adjuvants heighten immunogenicity of vaccine
- Economic argument for “orphan drug” reactogenic vaccine for transplant recipients receiving HBIg

Hepatitis C in Germany

- Very low risk of transmission through blood transfusion
- Main route of transmission: IDU (two thirds)
- Nosocomial transmission increasing - 90 documented cases in 1999 (an underestimate); 3 times more possible
 - Most cases due to breaches of infection control - therefore preventable
- Cases of transmission from HCV+ health care worker to patient in exposure-prone practices

Hepatitis C

- IfSG specifies case definition for surveillance
- Laboratory diagnosis
- Only acute cases reported
- 2002: 6600 cases reported - question remains about collecting data on incident cases; newly diagnosed cases may be chronic infection
- Serosurveys useful: 0.5-0.7% prevalence in general population, but 60-90% in IDUs and haemophiliacs; IDUs probably 50% of new infections

HCV-contaminated blood products

- Outbreak related to single strain of HCV and contaminated anti-Rhesus prophylaxis in 1978 followed up (1000 of 2500 women infected; limited age range)
- Small study of 106 exposed women lead to chronic infection (viraemia) in 45% and acute self-limited infection in 39%
- Symptomatic infection leads to lower rate of chronic infection
- Infections may be less severe than previously thought; changed liver histology
- Questions whether chronic infection is less an illness than a nuisance; younger age and milder outcome

Health care system

- Bismarckian system unsustainable given demographic trends, unemployment, long-term care needs etc
- Federal system restructured with 5 new public health agencies
- Data on hospitals (45% of expenditure) compare well with performances and costs in USA
- Ambulatory and hospital care may be linked
- Vaccines, free, covered by sickness fund association, but not automatically linked with STIKO recommendation
- Politicians' fine words on prevention not translated into action

Issues

- Controversy surrounds number and public health implications of transmission from HCV+ health care worker to patients
 - Expert Committees in Germany recommend restrictions on exposure-prone procedures - but no international (USA) consensus
 - contradiction between imposition of restrictions and successful implementation of universal precautions
- Guidelines (e.g. RKI's) on infection control need to be established, implemented and monitored

Issues

- How well informed are key players (e.g. teachers, midwives, nurses and adolescents) about viral hepatitis?
 - strengthen the evidence base
 - piggy-back HIV/AIDS awareness?
- No specialty for adolescent medicine
- Prevention gap between 5 and 14 years; e.g. coverage of adolescents with HB vaccine
- School-entry: HB vaccination rates rising rapidly, but not so for HA vaccination - wide regional differences
- Variations in public health staffing between Länder

Lesson learnt

- IfSG step forward; standardized case definitions a major advantage; reporting of reported risk factors is optional
- Surveillance data give accurate national maps, facilitating appropriate interventions
- Need for more field epidemiologists
- Hepatitis A: value of international collaboration in epidemiological investigations
- Hepatitis B
 - serosurveys provide valuable information
 - vaccine take up less in German population than by Turkish and Greek communities, and lower in East than West

Lessons learnt

- Good IEC materials exist, but poor policies
- Norway shown that hard-to-reach groups can be reached
- Sweden successfully used Internet to reach homosexual men with prevention messages
- Need for education of medical students about importance of hepatitis

General comments

- Value of genome sequencing for molecular epidemiology in outbreak management
- Safer medical devices being developed: needle shields and self-blunting needles effective but expensive
- Strengthen the evidence base for impact of vaccines on declining incidence

- Great progress in the past two decades: “we’ve come a long way”
- Data essential for monitoring prevention - evidence must be made public