

in December 2004. Two strains were isolated from wound swabs and one from a blood culture.

B. pseudomallei is an environmental Gram negative bacterium, endemic in tropical climates, that can cause melioidosis, a potentially life-threatening disease, even in previously healthy individuals. Humans can be infected by soil contamination of skin abrasions. Most human cases are reported from South East Asia where *B. pseudomallei* is endemic. The infection is very rare in Europe, and the only case to have been previously reported in Finland was in a man who travelled to Thailand in 2000 [1]. The spectrum of infections caused by *B. pseudomallei* ranges from mild wound infections to septic disease or pneumonia. In the severe forms of the disease, the mortality is variable, ranging from about 20% to 40% [2,3].

There has been increased awareness of melioidosis as a potential complication of the December 2004 tsunami in South East Asia, and a number of *B. pseudomallei* isolates from people who were injured in the natural disaster have been reported [4-6]. Most of the isolates have been from wound swabs, and only a few cases of systemic disease have been reported. The three Finnish cases described here are a reminder for clinicians to consider melioidosis in patients who have returned from South East Asia after the tsunami with unexplained fevers, or unusual Gram negative isolates from wounds, blood, or respiratory samples.

The first case was in a 17 year old woman with a deep wound in her lower leg. *B. pseudomallei* was isolated from a wound swab. She had been treated in a hospital in Bangkok for three days before returning to Finland. On arrival in Finland, her left foot was red and swollen, and a swab taken before revision of the wound grew *B. pseudomallei*. Consecutive swabs remained negative and further plastic surgery procedures were carried out a week later. The patient was treated with clindamycin and ciprofloxacin. She did not develop any clinical symptoms of melioidosis and has fully recovered.

The second case was in a 47 year old male. He had several superficial wounds, some of which had been surgically treated in Khao Lak. On arrival in Finland he had a fever, but his general health was good and vital signs were normal. He had a deeper wound in his right elbow and a small abscess in the corner of his left eye. Aspiration pneumonia was suspected because he had breathed in muddy water and his chest x ray showed bilateral changes. *B. pseudomallei* was isolated from two blood cultures taken during his first day in hospital. This patient is considered to have had a confirmed case of melioidosis. He was treated with broad spectrum intravenous antibiotics (ceftriaxone, clindamycin and levofloxacin, followed by meropenem and ciprofloxacin after the results of the sensitivity testing were obtained). His fever continued for ten consecutive days, but he has now recovered. He is still on doxycycline and trimethoprim/sulfamethoxazole therapy, which is to be continued for twenty weeks.

The third case was in a 54 year old man who had a wound infection and was sent to hospital by a general practitioner one day after returning to Finland. Two of his wounds had been sutured in Thailand. After admission to hospital in Finland, he developed septic shock and was treated in an intensive care unit (ICU) for three days. He did not have pneumonia and was treated with meropenem and ciprofloxacin. All blood cultures remained negative. A wound swab taken during wound revision three days after the patient was released from the ICU grew *B. pseudomallei*. The diagnosis of melioidosis is presumptive. The patient was treated in hospital for 29 days and recovered fully. His antibiotic treatment has been discontinued.

Clinicians or microbiologists currently dealing with cases of melioidosis in patients returning from South East Asia after the tsunami are invited to contact David Dance at the Health Protection Agency South West Regional Microbiologist Office in England, who is collating information on cases worldwide. Email david.dance@phnt.swest.nhs.uk or telephone +44 (0) 1752 247143.

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HEPATITIS B IN NORTHWEST RUSSIA AND THE NORDIC AND BALTIC COUNTRIES: RECENT TRENDS AND PREVENTION ACTIVITIES

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Hepatitis B is a notifiable disease in all the Baltic and Nordic countries, and in northwest Russia. Iceland and Estonia, however, do not have systems to separate acute infections from a chronic carrier state. The other countries in the region are able to distinguish and report the two forms of the disease separately. In northwest Russia, chronic hepatitis B patients and hepatitis B carriers are reported separately. All the countries report only laboratory confirmed cases.

FIGURE 1

Number of cases of acute hepatitis B notified in 2003, per 100 000 population [1]



Trends

The overwhelming majority of notified acute cases of hepatitis B in the region occur in injecting drug users (IDUs). In the Nordic and the Baltic countries, the incidence rates of hepatitis B fell dramatically in the early 1980s. This followed the introduction of vaccination programmes targeted at high-risk groups such as IDUs and men who have sex with men. The introduction of HIV preventive measures such as disposable syringes in medical treatment contributed to the fall in incidence rates in the eastern part of the region.

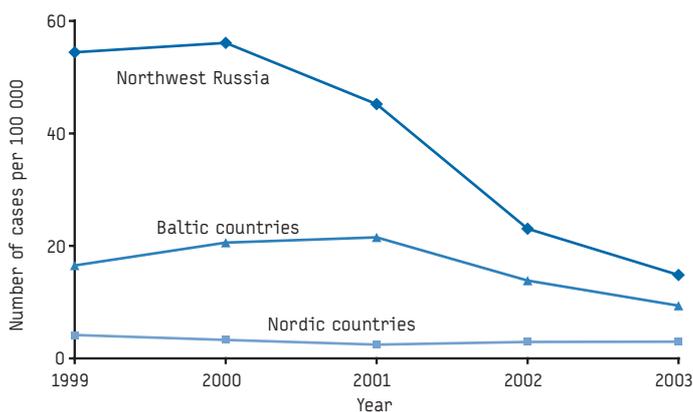
In the 1990s, however, many of these countries experienced another surge in incidence, caused mainly by outbreaks among groups of non-immune IDUs. This coincided with an increase in the number of young people injecting drugs. In the early and mid-1990s, a growing number of IDUs led to very high incidence of hepatitis B in both

northwest Russia and the Baltic countries [FIGURE 1].

Since the late 1990s, Finland, Norway and Sweden have experienced large nationwide outbreaks in IDUs and the disease seems to be endemic again in this high-risk group. The number of newly diagnosed cases has dropped considerably in the eastern part of the region [FIGURE 2]. A combination of effective preventive measures and a decrease in numbers of susceptible IDUs may have contributed to this improvement. The spread of hepatitis B in drug users has resulted in a growing number of sexually transmitted cases among IDUs' sex partners, most of whom are women. As a consequence, preventing hepatitis B in newborn babies has become a concern in most of the countries in the region.

FIGURE 2

Number of cases of acute hepatitis B notified per 100 000 population 1999-2003 by groups of countries or regions [1]. Iceland, Komi, Pskov, Novgorod and Vologda regions not included



Transmission of hepatitis B by routes other than needle sharing or sex is rare in the Nordic countries, and healthcare-associated hepatitis B infections mostly occur in the eastern part of the region. Likewise, healthcare workers in the eastern part of the region are at greater risk of contracting hepatitis B than in the Nordic countries.

Due to the increasing number of acute cases in IDUs and their sex partners, more and more cases of the chronic, carrier state are being diagnosed in this group all over the region. Seroprevalence studies among IDUs performed 2000-2002 in the region have shown the following prevalence of any hepatitis B markers of previous or current infection: Estonia 65%, Latvia 38%, Lithuania 7%, Norway 53% and St. Petersburg 16% [2,3,4].

In the Nordic countries, immigrants from highly endemic countries constitute the overwhelming majority of notified cases of hepatitis B carriers. Most of these patients acquired their infection at birth or in early childhood in their former country of residence. The number of notified chronic hepatitis B carriers therefore usually reflects the number of immigrants entering the countries each year.

Prevention

A reduction in the transmission of hepatitis B among IDUs would have the most impact on numbers of hepatitis B infections throughout the region. This would also lead to a reduction of sexual and mother-to-child transmission. Prevention among high-risk groups such as IDUs relies on information campaigns, general measures to reduce drug abuse, and introducing harm reduction by ensuring clean needles and syringes are supplied to IDUs. Clean needles and syringes are available at pharmacies throughout the region, although in Sweden, needles can only be obtained with a doctor's prescription. Local health authorities throughout the region, with the exception of Iceland and Sweden, have introduced free needle programmes, needle exchange programmes or both. In Finland, regional health authorities are obliged by law to set up needle exchange programmes. More than 2 million clean needles and syringes are distributed free of charge in Oslo each year. Easy access to clean needles and injection equipment can still be a problem in some areas in northwest Russia, and some of these harm reduction programmes are often disliked or opposed by the local police.

Hepatitis B vaccine is part of the national immunisation programmes for newborn babies in Russia and in the Baltic countries, and there are also special programmes aimed at vaccinating teenagers. This is seen as an important measure for quickly reducing the incidence in drug users. In the eastern part of the region, implementation of hepatitis B vaccination of newborns and teenagers has been slow due to lack of funding. Improved funding and bilateral projects between the Nordic countries and regions in northwest Russia as well as funding from the Vishnevskaya-Rostropovich Foundation has now resulted in high vaccination coverage in newborns and some teenage cohorts. Close contacts of people with acute disease or carrier status are also offered hepatitis B vaccination in Russia.

None of the Nordic countries have so far included hepatitis B vaccine in their national vaccination programmes. Instead, they have adopted a strategy of selective vaccination of high-risk groups such as drug users, men who have sex with men, close contacts of known carriers, haemophiliacs and people with underlying liver disease. The costs of the selective programmes are covered differently in the various Nordic countries, but in all countries vaccine is given free of charge to most of the targeted groups.

In contrast to the rest of the region, few vaccination campaigns have so far been directed towards the injecting drug user communities in northwest Russia. One exception is the region of Kaliningrad where a special vaccination project aimed at youth at risk of drug use has been started. Healthcare workers are extensively vaccinated against hepatitis B in most parts of the region.

Estonia, Iceland, Latvia and northwest Russia have introduced a universal screening policy for pregnant women. Due to lack of funds, however, not all pregnant women are screened for hepatitis B in northwest Russia. In the other Nordic countries, screening of pregnant women is selective.

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FIVE CASE HISTORIES OF TULARAEMIA INFECTION IN OPPLAND AND HEDMARK COUNTIES, NORWAY

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From the middle of June 2003 to 10 October 2003, six cases of tularaemia were confirmed in the Norwegian central and eastern counties of Oppland and Hedmark [1]. Four of these cases were IgG and IgM positive for antibodies against *Francisella tularensis*. In one case, the titre was over 8000. The fifth case was both culture and PCR positive for *F. tularensis*. The patients were all males - aged 15, 17, 34, 36, 59 and 74 years respectively.

Serum specimens were tested at St. Olavs Hospital in Trondheim by microagglutination technique as well as ELISA for IgG and IgM antibodies.