EDITORIAL

TUBERCULOSIS AND BCG IN EUROPE

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BCG (Bacillus Calmette-Guerin) vaccine was developed from an attenuated strain of *Mycobacterium bovis* at the beginning of the twentieth century. Its widespread use as a vaccine against tuberculosis spread in Europe, and subsequently globally, over the next 50 years. It remains one of the most frequently administered vaccines in the world. It has also been one of the most controversial. Widely differing estimates of the effectiveness of BCG at protecting against different forms of tuberculosis in different population subgroups in different settings have been published [1]. Some countries, with a low incidence of tuberculosis, did not adopt the use of BCG vaccine at all and some others abandoned its use at a later stage. In addition, great variation developed in national programmes for the administration of BCG including the age(s) at which it should be given, whether or not its administration should be preceded by tuberculin sensitivity testing, and whether repeat vaccinations with BCG should be given.

Policies for the use of BCG vaccine are under review in 12 European countries. The most common proposal is a shift from universal vaccination to selective vaccination of children at risk.

In recent decades, some consensus has been reached about the role of BCG vaccination in populations where it appears to offer some protection. Protection appears to be greatest in infants and children and against the early primary progressive forms of disease (including disseminated disease and meningitis) [2,3]. Protection against disease resulting from secondary reactivation, particularly pulmonary disease in adults, appears to be much more limited. As this is the group of cases responsible for most transmission of infection, BCG vaccination probably has very limited impact on controlling the incidence of new infections in the community. In addition, the evidence that repeat vaccination offers additional protection is very limited.

It is therefore timely that, on World TB Day, this edition of Eurosurveillance brings together a series of articles on the use of BCG vaccination in Europe demonstrating not only the continued variation in policies for the use of BCG, sometimes in otherwise very similar epidemiological settings, but also the growing number of countries reviewing and revising their national policies in the light of the growing consensus on its role and the local pattern of occurrence of TB.

Andrea Infuso and Dennis Falzon, on behalf of the EuroTB network (www.eurotb.org), have surveyed national policies on BCG vaccination in Europe [4]. Most (83%) countries responded to reveal policies that varied from no use of BCG vaccine at all, through use of vaccine in neonates and infants in population groups assessed to be at high risk of infection, to vaccination of all children at birth, in infancy, at school entry or in later school years. Routine revaccination, with or without prior tuberculin sensitivity testing, is recommended in four countries – in one instance, for all children at four separate ages. In 12 countries, the current policy was reported to be under review with a shift from universal vaccination to selective vaccination of children at risk being the most common proposal.

Limited data on BCG vaccine uptake levels or information on the occurrence of adverse effects was available and the authors conclude by calling for more systematic collection of comparable data between countries, as well as the discontinuation of routine revaccination. The availability of comparable data on the occurrence of TB in different countries and an understanding of current policies for BCG vaccine use and its uptake, contribute usefully to discussions within individual countries about future policy.

France is one such country that is currently reviewing its approach to the use of BCG vaccine. Daniel Levy-Bruhl reports that revaccination with BCG has ceased from 2004 in France [5]. Moreover, the Conseil Supérieur d'Hygiène Publique de France (the national high committee of public hygiene) has recommended the discontinuation of routine vaccination of all schoolchildren, in favour of a more targeted approach, but only when other measures to strengthen control measures to decrease the risk of infection in children have been implemented. In Finland too, where all newborns have routinely been offered BCG vaccination with an uptake rate of 98%, Eeva Salo reports that the national policy has recently been revised so as to offer BCG only to risk groups [6]. A similar review and revision of BCG policy in the United Kingdom has also taken place in July 2005, with the implementation of selective vaccination and abandonment of the universal schools BCG programme in place since the 1950s [7].

Sweden, by contrast, abandoned its policy of universal BCG vaccination in 1975 while retaining selective vaccination for high risk groups [8]. Victoria Romanus reports that the incidence in indigenous Swedish born children, which was already very low in the 1970s, has remained low. High uptake of BCG vaccination, however, has been achieved in the high risk groups. Despite the low incidence in Sweden, outbreaks occasionally occur in vulnerable groups such as young children in association with delayed diagnosis, providing a reminder of the need to identify and institute treatment in active cases early as well as to screen contacts who may have been exposed.

Another benefit of the collaboration of all European countries in the EuroTB surveillance network has been the opportunity to collate information on the outcome of treatment in patients with tuberculosis. This is not without difficulty as assessment of treatment outcome in individuals within countries involves decisions about which cases to include, how to classify various categories of failure to complete standard treatment and how to deal with cases on which there is only partial or complete absence of information on outcome. To collate these data from different countries and provide information that can usefully be compared between countries is an even greater challenge. Dennis Falzon and colleagues [9], on behalf of EuroTB, have gone along to achieving this through the development of standardised outcome categories, and definitions of disease type and population subgroups to be included (all confirmed pulmonary cases with or without previous treatment). Forty-two of 51 eligible European countries submitted results and completeness of reporting was reported to be very high in most countries (at least 98% of originally notified cases in 35 countries). Despite generally high levels of reported successful treatment completion, problems with the interpretation of outcome categories such as 'defaulted', 'transferred' and 'unknown' continue to complicate the interpretation of the outcome in those in whom treatment has probably not been successful. The authors conclude that further simplification of outcome categories combined with standardisation of the application of the definitions will lead to more robust and comparable data.

Finally two reports from TB trouble spots, Latvia and London, illustrate the different tuberculosis problems in those widely different settings and the challenges to achieving effective control of tuberculosis. Vaira Lemaine from Latvia [10] describes the high incidence of disease, including high prevalence of multi-drug resistance (MDR), that has emerged since the early 1990s with the socio-economic disruption and health system reform that followed the political changes of that period. The implementation of a new national tuberculosis programme in 1996 with adoption of the WHO Directly Observed Therapy Short-course (DOTS) strategy for all new cases and, in 1999, the addition of the WHO DOTS-Plus strategy for individualised management of MDR tuberculosis, has led to great progress in reducing case numbers. Much remains to be done, however, and progress to date is threatened by a developing HIV epidemic. In London, as Delphine Antoine and colleagues report [11],

tuberculosis is not under control and case numbers continue to increase, though not at the levels reported from Latvia. Particular problems are identified with tuberculosis in the homeless, drug users and alcoholics. The authors call for greater adaptation of treatment and care services in London to cater for the special needs of those at greatest risk of tuberculosis in the capital including greater use of DOT (especially in the intensive phase) and greater support for patients during treatment.

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EDITORIAL

TATTOOING AND PIERCING – THE NEED FOR GUIDELINES IN EU

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As in Amsterdam [1], the impetus for UK guidelines for hygienic tattooing came from an outbreak of hepatitis B caused in 1978 by a tattooist. The outbreak resulted in 30 primary and 3 secondary cases [2]. Guidelines for hygienic tattooing followed soon after, and were taken up, fairly enthusiastically on the whole, by the tattooists. These were expanded in 1982 to include acupuncture, ear-piercing and hair electrolysis. Laws to control the hygiene of these practitioners were introduced at the same time {Local Government Miscellaneous Provisions Act 1982 [amended 2003] and the Greater London Council [General Powers] Act 1982}. Body piercing was hardly heard of at the time: although it was undoubtedly and somewhat furtively practised, it was not as popular or as open as it is now. Guidelines for beauty therapy, hygienic hairdressing and micropigmentation followed.

The main, and most urgent, problem with non-medical skin penetration is hygiene – in particular the transmission of bloodborne viruses, and especially hepatitis B. This virus is arguably the most infectious organism known to man and can survive for long periods in the environment. Fortunately, the guidelines formulated in 1978 and 1982 in the UK were for hepatitis B, so that when the other two main bloodborne viruses, hepatitis C and HIV, became known a little later, being much less resistant, they were adequately covered by the guidelines.

HCV may be asymptomatic for years, and HIV may also be asymptomatic, though usually for a shorter period. HBV infection in adults is less commonly asymptomatic, but all three infections eventually cause serious symptoms. The incubation periods for these three infections can be long, which can make outbreaks difficult to recognise. Bacterial infection must also be considered – in my experience, these usually arise from poor aftercare or poor aftercare advice. Infection introduced at the time of the piercing may lead to septicaemia and even to endocarditis in susceptible persons, and also, of course, to wound infections. Infection arising after piercing the cartilage of the ear is a particular and urgent problem, brought about as frequently by poor aftercare as by an unhygienic piercing.

Besides the hygiene of non-medical skin piercing, other factors need to be addressed such as training and accreditation of practitioners

The hygiene of non-medical skin piercing needs to be addressed urgently in the EU, so that uniform and effective guidelines can be applied throughout the Community. Otherwise, with different guidelines, standards of practice will vary from country to country.

Other factors that need to be addressed urgently (not all to do with hygiene) are

- Age of consent for each type of piercing, as well as competence to give consent;
- The use of disinfectants, including alcohol for skin disinfection and work surfaces, chlorine-based solutions for surfaces and blood spills, etc
- The training and accreditation of practitioners, which follows from the above;
- The use of anaesthetics, including ethyl chloride which is more painful than the piercing and may cause freezer burns, and local anaesthetic creams;
- Pre-piercing advice, including warning of the possibility of complications (for ear-cartilage piercing in particular);
- Aftercare advice given to customers;
- Record keeping;
- Ethical issues, such as forming an accredited association of competent practitioners who will ensure high standards so that members of the public know they will receive a guaranteed service of competence and safety, as well as those (alcohol and drugs) referred to by Worp and colleagues. There should be one national association for each type of practitioner, so that uniform standards are followed.
- Epidemiological studies of the rate and incidence of complications following the different types of piercing. A study is currently being conducted by the Health Protection Agency Centre for Infections in England and Wales.

The use of non-sterile or chemically toxic pigments, as specified by Worp and colleagues, undoubtedly also needs attention but I am not aware of infection caused by pre-contaminated pigment and the problems of toxicity and allergy need more research before making recommendations. Guidelines for hygiene and the other factors mentioned should not have to wait for these.

The authors are to be congratulated for their fine work in controlling non-medical skin piercing in Amsterdam, and in particular for their work in monitoring the performance of skin piercing establishments.

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