Low BCG vaccination coverage after the end of compulsory vaccination in Ile-de-France (France), a region of high tuberculosis incidence

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Background

In January 2006, multipuncture device (Monovax®, Sanofi Pasteur MSD, France) was withdrawn from the market and replaced by the intradermal BCG device (SSI, -Serum Staten Institut, Danemark). In July 2007, mandatory BCG vaccination for all children was replaced by a strong recommendation to vaccinate those at high risk of tuberculosis, among whom all children living in Ile-de-France region, the most affected region of mainland France (18.4/105).

Objective

We used three different methods to evaluate the impact of these two measures on BCG vaccination coverage in this region of the country.

Methods

Analysis of BCG sales trends, 2006-2008

Sales data to private pharmacies (around 90% of vaccine sales in France) were provided by the Groupement for l’Elaboration et la Réalisation de Statistiques (GERS). Sales to the public sector (MCH clinics) were obtained from Sanofi Pasteur MSD. We compared BCG sales in a given month after 2005 to that for the same month in 2005. Up to the end of 2005, virtually all children were vaccinated before 6 years of age.

Survey in the private sector, February 2008

We performed a cross-sectional survey among a network of general practitioners and paediatricians particularly aware of recent changes in the field of vaccinations. Children born after withdrawal of Monovax® from the market were recruited by doctors during their medical consultation. Information on BCG status was collected through a structured online questionnaire. The analysis was stratified by age group (born between withdrawal of Monovax® and end of compulsory vaccination, 2-23 months; born after end of compulsory vaccination, 2-7 months).

Survey in the public sector, May 2009

We performed a two-stage random sampling survey in MCH clinics (where 35% of BCG vaccinations are performed). We first selected MCH clinics (N=48) with probability proportional to size. We then selected 10 children in clinic in two age groups (2-12 months, 13-23 months). They were all born after the end of compulsory BCG vaccination. To minimize design effect, a maximum of two children were recruited per clinic “session” (half a day). Data on BCG vaccination status were collected by the physician examining the child through a structured questionnaire. The analysis was stratified by age group.

Results

BCG sales

Withdrawal of the Monovax® led to an immediate and sharp decrease in BCG vaccination activities (Figure 1). In the last six months of 2008, monthly sales were usually 50-65% of that of the 2005 level.

Survey in the private sector

A total of 517 children were recruited by 92 doctors. Among the 259 children born after the end of compulsory vaccination (2-7 months) and followed by private practitioners, 68% had been vaccinated (Table 2). Vaccination coverage was lower (51%) in children of this age group followed by clinicians working solely in the private sector, whereas it was higher (82%) among those followed by doctors that had a mixed private and public activity.

Survey in the public sector

Vaccination coverage was higher in children born between withdrawal of Monovax® and the end of compulsory vaccination (77%) than in children born after the end of compulsory vaccination (68%).

Conclusions

- Except in the public sector, BCG vaccination coverage remains insufficient in high risk children.
- The emphasis given in 2007 to vaccination of those children did not allow to catch up for the decrease in coverage created by the disappearance of Monovax®.
- Priority should be given to continuing to train doctors in intra-dermal vaccination and to strengthen the communication concerning the new vaccination policy.