Overview of the Immunization Situation in Albania

Eftiola Pojani
, Catholic University "Our Lady of Good Counsel", Tirana, Albania

Erida Nelaj
Department of Epidemiology and Infectious Disease Control,
Institute of Public Health, Tirana, Albania

Assoc. Prof. MD Alban Ylli
University of Medicine, Faculty of Public Health,
Tirana, Albania

Abstract

Vaccination coverage is one of the most important components which describe the immunization situation in a country. Now days more and more combined vaccines are being used which help the immunization programs to achieve high coverage for more than one antigen. Another reason for coverage improvement is the use of one or two-dose vials for the administration of DTP-HepB–Hib or MMR vaccine, enabling the vaccination of children at any time. In the last three years vaccination coverage with two doses of MMR and three doses of DTP containing vaccines is more than 95% or sometimes even 98% at national level. The coverage of Hepatitis B vaccine is also high due to its use on 5 in 1 combination. The use of one dose vials has played an important role on sustaining and increasing vaccination coverage. Another component affecting the immunization situation in the country is the influence of parental knowledge for vaccines and vaccination in Albania. Collected data through the use of a questionnaire showed that 6% of respondents have had fear and consequently refused vaccination of their children. While 92% of parents had the opinion that information about the health benefits or risks of vaccines would be absolutely useful and given to them prior to vaccination from health care workers. 72% of the subjects were concerned about the side-effects but this concern hasn't stopped them to vaccinate their children. 35% of the interviewed mothers were still concerned that their child would contract a disease even though he/she had been already vaccinated.

Keywords: Immunization, vaccines, influence, vaccination coverage.

Introduction

National immunization program in Albania started in 1993 when WHO regional morbidity and mortality targets for vaccine-preventable diseases (VPDs) were officially adopted. Before that the country had a national programme on "production and administration of vaccines", which gave high priority to studies on vaccines' impact on the population immunity and to epidemiological surveillance of VPDs. However, despite the challenges, Albania has maintained a relatively well-performing immunization system that has maintained high coverage.The practice of vaccination is known as one of the highest efficient interferences in preventing the spread of infectious diseases. The vaccination applied on large-scale and in accordance with the appropriate strategies can lead not only to control but also to the elimination of special diseases (WHO, 2013). In the recent years a trend toward the use of combined vaccines is noticed with the purpose of increasing the practicality of application and minimizing logistical problems. (Nelaj, 2013). Immunization schedule has been improved gradually by adding new vaccines or new vaccine components such as rubella component (MR vaccine) introduced in 2000 and mumps component in 2005, (MMR vaccine). In 2009 Hib component (Haemophilus influenza type b) was added to as a combined vaccine of DTP-HepB-Hib, enabling in this way for children to receive at one time five antigens in one combined vaccine. (Pojani & Nelaj 2016). Though significant epidemiological results are achieved due to the efficacy of vaccines combinations, immunologists and microbiologists are still debating on the full equality of the immune response to the special antigens compared with those combined (M&B 7 1998, p.461-463). Despite the potential for protection against a broad spectrum of pathogens, the increasing availability of the effective vaccines can lead to a significant reduction of vaccine coverage as a

result of problems related to the applicability of new vaccines according to the existing protocols. To overcome these problems, the development of combined vaccines is promoted. Their use offers benefits such as, reduction in the number of patient visits, reduced complications associated with multiple intramuscular injections, reduces in cost and administration of special vaccines, and decrease in the risk of delayed or lost vaccine. Recent debates on vaccine can lead to decrease of immunization coverage and a simple and short survey is done in order to evaluate knowledge and attitudes of mothers regarding the immunization.

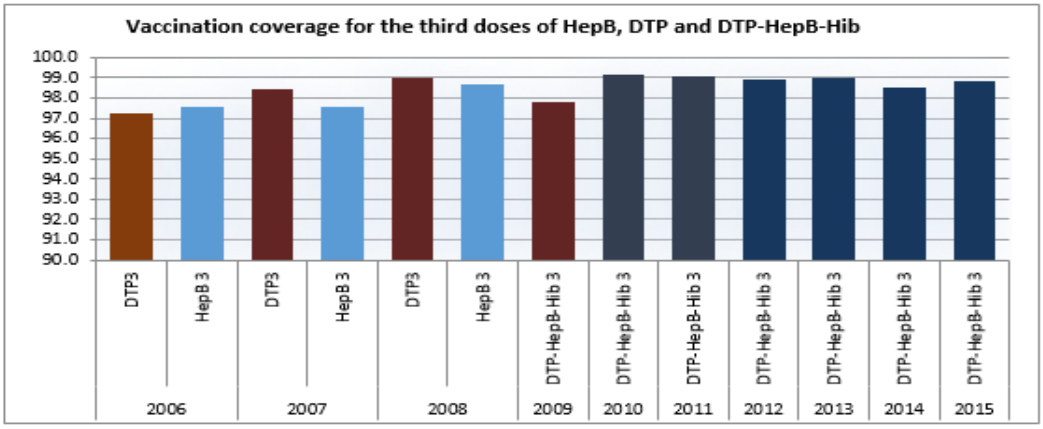
Materials and Methods

In this study we aim to demonstrate the two most important components that affect and describe the immunization situation in Albania, the first is the vaccination coverage in years and the second is the parental knowledge. Vaccination coverage is one of the most important components which describe the immunization situation in a country. Now days more and more combined vaccines are being used which help the immunization programs to achieve high coverage for more than one antigen. Another reason for coverage improvement is the use of one or two-dose vials for the administration of DTP-HepB–Hib or MMR vaccine, enabling the vaccination of children at any time. Immunization coverage is usually assessed on the basis of the percentage of number of vaccinated children through the ones targeted to get the specific vaccine at a certain age. The reported covarage data taken from the vaccination centers are aggregated to higher levels by providing values at districts and national levels. In this study, we tried to provide facts about the vaccine coverage for combined vaccines such as DTP containing vaccines and MMR during the last 10 years, in order to confirm the stability of the immunization program. In this study we also tried, to evaluate knowledge and attitudes of mothers regarding the immunization, as this is an important component that affects the immunization situation, in a random sample of 100 children from Tirana, Durrës, Pogradec and Korçë, Albania. The questionnaire collected data on: person answering the questionnaire, parent's educational and occupational status, parental knowledge of vaccines and vaccination and type of vaccine administration. The questions about attitudes on the utility of vaccinations were scored on a 5-point Likert scale with options ranging from "1") to "5"). The behavior responses and the questions concerning mothers' responsibility on taking decisions regarding vaccination were in "yes/no" format and only two questions were open ones.

Results

Regarding evaluation of vaccine coverage for HepB, DTP and DTP containing vaccines, is taken into consideration the application of the third dose, since it means the fulfillment of a series of vaccination with this vaccine, according to the national immunization schedule. Immunization coverage for the third doses appears to be above 95% during the last 10 years, at the country and district level. As it was mentioned, since 2009, DTP components were included in the pentavalent DTP-HepB-Hib combined vaccine.

Graph 1 shows the values of HepB3, DTP 3 and DTP-HepB-Hib3 vaccine coverage. It is clearly seen that the level of vaccine coverage for these components, exceeds the value of 95%, reaching in some cases 99% values. The average value turns out to be 98.3%



Graph 1. DTP vaccine coverage, in the first booster dose, during the years 2003-2013

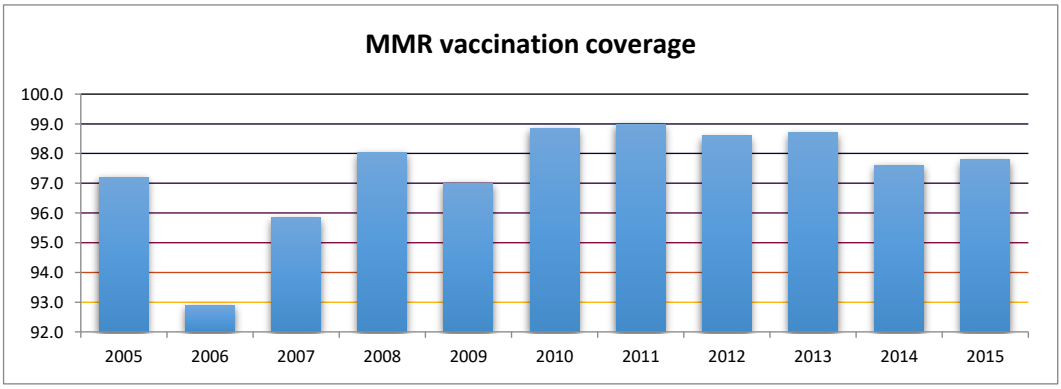
The same levels of booster doses for DT containing vaccines is seen to be maintained thorugh years, indicating a good performance of immunization program. the immuniztion coverage for DT in the second booster dose. Immunization is not obligatory but there is a requirement to be vaccinated before starting the school program wich strongly oblige parents to present their children immunization records before their enrollment.

In the context of eliminating measles (Kakarriqi & Bino 2002), an important factor for vaccine coverage is its level over 95% at country level and at the district level over 90%, or vaccination coverage 90% for two doses of vaccine containing component of measles, for all children until 2015.

MR vaccine was used in the years 2003-2004 and then, from 2005 until now the MMR vaccine has been used in the national immunization calendar (Bino, Kakarriqi, Xibinaku, Ion-Nedelcu, Bukli & Emiroglu 2003).

Furthermore, a reason for the improvement of this coverage is the use of one dose bottles administration for MMR vaccine, enabling the vaccination of children at any time, without the need of collecting them on certain days when the vaccine bottles are opened.

The situation after 2006 appears to have taken another trend and we notice a steady decline in the reported cases and therefore, we can say and believe that the combined MMR vaccine is effective in Albania. For the first dose of vaccine the coverage average value is estimated to be around 98% which shows that the vaccination coverage is also high at the district level, we also noticed a steady decline in the reported cases and therefore, we can say and believe that the combined MMR vaccine is effective in Albania, despite any small geographic difference (Pojani, Nelaj, Ylli & Simaku 2015).



Graph 2. Immunization coverage with measles vaccines in years.* Mumps component (parotit) was introduced in 2005

Although in the global strategy for the elimination of measles (Hall & Jolley 2011) the vaccination coverage in every district should be above 90%, for our country it is clearly seen that this coverage is in very high levels, i.e. well above 95%. For the first dose the average value is 98.8% and with IC [98.4% -99.3%].(Graph.2) The vaccination coverage is also high at the district level.

Despite the limits of our methodology that does not allow us to firmly conclude about the effectiveness of the single antigen measles vaccine used in Albania before the year 2000, there seem to be a clear impact of the combined antigen vaccines MMR applied in the country since that year. There is a clear time relation between the introduction of MR vaccine in 2001 and the virtual stop of circulation of measles in Albania. Few sporadic cases encountered in 2006, 2007 remained isolated and no more cases are reported in the later years.

Since many factors may influence vaccination coverage, there are some important variables that should be taken into account, such as mothers' concern about vaccination which can be considered important information and in which the vaccination of infants depends.

According to this, the respondents were asked if they had ever refused their child vaccination only for fear of the side effects and the result was that 6 parents out of 100 responded they had had this fear and consequently refused vaccination as

seen in Table 1.Collected data through the use of a questionnaire showed that 6% of respondents have had fear and consequently refused vaccination of their children.

Mothers' concerned about…	Somewhat concerned	Quite concerned	Totally concerned	I don't know
Concerned that your child may contract a vaccine-preventable disease and suffer a serious reaction to the disease.	11	59	21	9
Concerned that your child may experience a bad reaction to a childhood vaccine.	6	17	72	5
Concerned that your child could still contract a disease for which has been vaccinated.	28	35	20	8

Table 1. Respondents' attitudes about vaccination

While 92% of parents had the opinion that information about the health benefits or risks of vaccines would be absolutely useful and given to them prior to vaccination from health care workers. 72% of the subjects were concerned about the side-effects but this concern hasn't stopped them to vaccinate their children. 35% of the interviewed mothers were still concerned that their child would contract a disease even though he/she had been already vaccinated (Pojani & Ylli 2016).

Leask's (2012) study found the following: **"***A critical factor shaping parental attitudes to vaccination is the parents' interactions with health professionals. An effective interaction can address the concerns of vaccine supportive parents and motivate a hesitant parent towards vaccine acceptance (Brown, Kroll, Hudson, Ramsay, Green, Long, Vincent, Fraser & Sevdalis 2010). Parental vaccination decisions are based on an array of factors and parents integrate information according to their experiential and social contexts* (*Poltorak, Leach, Fairhead & Cassell 2005). A parent's trust in the source of information may be more important than what is in the information (Kempe, Daley, McCauley, Crane, Suh, Kennedy, Basket, Stokley, Dong & Babbel 2011)***",** (Leask, Kinnersley, Jackson, Cheater, Bedford & Rowels 2012).

Conclusions

Immunization coverage for vaccines with measles and DTP components remains at very high levels. To continue with the same high levels of vaccination coverage for these vaccines, there are some steps that should be followed: closely tracking and monitoring the vaccination performance, strengthening the surveillance of VPD's in order to prevent any possible transmission of the disease and working to eliminate the receptive pockets, i.e. vaccination of children who are still unvaccinated due to parents' negligence or refusal.

Immunization coverage for vaccines with DTP component exceeds 95% at the national level, and for each district it is above 95% and in the last two years, it overpasses the 95% value. During the last years, the vaccine coverage has increased significantly as the result of using DTP-HepB-Hib vaccine. Regarding tetanus booster doses, it is recommended that this calendar will not only cover children aged 0-18 years, but also adults and the elderly ones with booster doses every 10 years. In addition, ways of reporting coverage vaccination should also include children with backward vaccination.

As for the other variable, the parental knowledge, we can conclude that the majority of the parents was very confident in vaccine safety and believed that vaccines are important to children's health. They strongly agreed that the benefits of vaccines outweighed the risks. Anyway, continues communication with parents and giving the right information is crucial in maintaining high immunization coverage.

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