Type: Poster Presentation

Final Abstract Number: 63.018
Session: Vaccines and Vaccine Development
Date: Saturday, April 5, 2014
Time: 12:45-14:15
Room: Ballroom

Is a compact prefilled auto-disable injection system (cPAD) cost effective for pentavalent vaccine?

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Background: The pentavalent combination vaccine is the WHO-recommended form of the DTP-HepB-Hib vaccine. It is available in single dose vial (SDV), multi-dose vials (MDV) and soon in a compact prefilled auto-disable injection system (cPAD). A costing model was developed and used in three countries to perform a Cost-Effectiveness Analysis (CEA) of these three presentations.

Methods & Materials: The model included the costs of vaccine, safe injection equipment, storage, transport, distribution, vaccine administration by health staff, waste management, start-up activities, coverage and wastage rates. The outcome was the incremental cost/saving per fully immunized child (FIC) for a switch to cPAD. The model was used in Peru, Ghana and Cambodia. Field visits to health facilities, interviews with key informants from immunization services and regulatory affairs were conducted.

Results: Based on vaccine price trends estimated for the year 2016, cPAD would be more cost-effective in Ghana compared to the current presentation (MDV-10) and in Peru (SDV). In Cambodia, cPAD would be less cost effective (SDV).

The most significant driver of the cost per FIC is the cost of the vaccine (including compensation for vaccine wastage) in any presentation: accounting for 85% of total cost in Peru and over 97% in the two other countries. The dominance of the vaccine price per dose and to a lesser extent the wastage rates and cost of safe injection equipment as drivers of the incremental cost per FIC show the potential to simplify future analyses. Programmatic contexts and perceptions of stakeholders influence the decision to introduce new vaccine presentations. Other factors include the potential for improved safety with cPAD, planned introduction of other vaccines and environmental issues relating to reduced waste generation.

Conclusion: Based on vaccine price estimated for the year 2016, the cPAD could be the most cost-effective presentation in many countries. For decision making and policy dialogue other factors (injection safety, programmatic aspects, etc.) may be important when considering shifting to a new vaccine presentation such as cPAD.

Conflict of interest: Crucell funded the study.

Table 1.

Table 1
Incremental costs of cPAD as compared to the current pentavalent presentation

	Cambodia, 2013-2020	Ghana, 2013-2017	Peru, 2013-2017
Incremental cost per FIC USD (%)	0.32 (+3.76%)	−0.58 (-6.41%)	−0.90 (-7.20%)

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Clinical development of a recombinant live attenuated tetravalent dengue vaccine

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Background: Takeda is developing a tetravalent, live attenuated dengue vaccine (LADV) consisting of a molecularly characterized, attenuated DENV-2 strain and three chimeras in which the prM and E genes of the attenuated DENV-2 were substituted with those of DENV- 1, -3 or -4 viruses.

Methods & Materials: Takeda is conducting Phase 1 and 2 clinical trials for the LADV

Results: The results of our Phase 1 and 2 clinical trials in healthy subjects support the safety and immunogenicity of the tetravalent vaccine. Administration of LADV was generally well-tolerated with mostly mild and transient local or systemic reactions. There were no related serious or severe adverse events (AEs), and no discontinuations due to vaccine-related AEs. The LADV induced neutralizing antibody responses to all four dengue viruses after one or two administrations.

Conclusion: These studies highlight the safety and immunogenicity of the tetravalent LADV vaccine in children and adults in dengue endemic countries. Based on our results from Phase 1 and 2 studies, the LADV warrants further evaluation in Phase 3 efficacy studies in children and adults in dengue-endemic countries.

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A large single-center retrospective analysis of neutralizing antibodies after intradermal pre-exposure rabies vaccination

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Background: Soldiers in the Belgian Defence are intradermally vaccinated for rabies pre-deployment since 2008 by a four injection schedule (day 0,7, 28, 365). Neutralizing antibody titers against rabies were tested 7 days after booster vaccination. Serology results of subjects, vaccinated between the 1st of april 2008 and the 31st of june 2013, were evaluated. A titer of the Rapid Fluorescent Focus Inhibition Test (RFFIT) $\geq$ 0,5 IU/ml is considered to be boostable. A titer > 3,0 IU/ml is considered to give sufficient protection and > 10 IU/ml a long-lasting immunity.