EICA-EUGMS stakeholders conference
San Servolo, May 24-26, 2017

Recommendations

Changing the vaccine paradigm: Stressing the importance of adult immunization

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CONFLICT OF INTEREST DISCLOSURE

I have the following potential conflicts of interest to report

- Support for participation to expert meetings: MSD, GSK
- Research projects: Takeda, Sigma Tau
Rationale of the conference

The conference has been planned in the frame of the WHO healthy aging concept

“The process of developing and maintaining the functional ability that enables wellbeing in older age”

Rather than focusing on the absence of disease, *Healthy Ageing* is considered from the perspective of the functional ability that enables older people to be, and to do, what they have reason to value.
Pillars of life-course health promotion and disease prevention for WHO

- Nutrition
- Physical activity
- Smoking cessation
- Vaccination

(WHO meeting on “Immunization in the elderly, March 22-23, 2017, specifically for low-and middle-income countries”)
Specific Objectives

- **Reviewing** the vaccines preventable diseases and the vaccine performance in older adults

- **Analysing** the impact of adult vaccinations programs currently adopted in Europe

- **Understanding** the challenge of skepticism toward vaccination in the general public, media, and health practitioners, particularly in Europe, which is the most skeptical of all regions when it comes to vaccine safety  
  
  *(H. Larson, London School of Hygiene, Director of the Vaccine Confidence Project)*
Vaccine development and next generation technologies

- 1930: Empirical Approach
  - Diphtheria, Tetanus, Pertussis, Rabies, Influenza, Smallpox, Polio, BCG

- 1980: Recombinant DNA
  - Hepatitis B, Acellular Pertussis, Lyme, Human papillomavirus

- 1990: Glycoconjugation
  - MenACWY, Pneumo, Hib, GBS, S. aureus

- 2010: Reverse Vaccinology
  - MenB, GBS, GAS, E. coli, S aureus, C. difficile

- 2016: Structural Vaccinology

- Adjuvants Human Immune Response

Synthetic Biology RNA vaccines

Courtesy of R. Rappuoli
Preventable infectious diseases: a significant cause of morbidity and mortality in older adults

- **Influenza:** Most influenza-related deaths occur in people aged =>65 years (90%) In the EU, the number of excess deaths associated with influenza is estimated between 40,000 and up to 220,000 depending on seasonal variation.

- **Pneumococcal pneumonia:** mortality may reach 60% among older patient. *Streptococcus pneumoniae* is estimated to cause ≥30% of community-acquired pneumonias requiring hospitalization in adults, which frequently leads to disability and death.

- **Pertussis:** A common and under-recognised infection, increasing in the last years. In older adults with prolonging cough episode diagnosis is often missed, so they are a significant vector for transmission of pertussis to children.

- **Tetanus** Almost 2,000 cases occurred in Europe between 1999-2009. More than two thirds of cases occur in people aged over 65 years.

- **Herpes zoster:** The main complication is postherpetic neuralgia, major cause of disability and loss of QL. The incidence of HZ and of postherpetic neuralgia (PHN) increases with advancing age, with PHN reaching more than 20% in older patients.
Benefits from vaccination: not only prevention of IDs, but promotion of healthy aging

- **Avoid mortality and costs linked to VPD**
  E.g. influenza vaccination coverage of 75% among individuals >65 yrs, in Europe would result in 1.6-2.1 million cases prevented, and 25,000-37,000 related deaths avoided, and in €153-219 million saved in healthcare cost.\(^1\)

- **Reduce complications and hospitalisation for chronic diseases**
  E.g. CVD, T2D, COPD, renal and hepatic diseases are more often associated to negative outcomes in case of infectious diseases.\(^2\)

- **Decrease antibiotic use/polypharmacy**
  E.g. Antibiotic prescription was reduced by 64% following influenza vaccination in Ontario, Canada.\(^3\)

- **Decrease antibiotic-resistant infections**
  E.g. Pneumococcal vaccines reduce the incidence of penicillin-resistant *Streptococcus pneumoniae*.\(^4\)

- **Improve on QoL and reduction of NCDs**
  E.g. Herpes zoster vaccine increases quality-adjusted life years in older persons by decreasing the burden of D, including decreased risk of stroke.\(^5\) Influenza and pneumococcal vaccination may reduce the incidence of MI up to 50%.\(^6\)

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Vaccines

Immunosenence

Vaccines

LIFE COURSE VACCINE PROGRAMME

Health services:
- Prevent chronic conditions or ensure early detection and control
- Reverse or slow declines in capacity
- Manage advanced chronic conditions

Environments:
- Promote capacity-enhancing behaviours
- Remove barriers to participation, compensate for loss of capacity

Long-term care:
- Support capacity-enhancing behaviours
- Ensure a dignified late life

Courtesy of JP Michel
To improve vaccine uptake in older individuals, the following stakeholders are involved:

- National health authorities and EMA
- Vaccine companies
- GPs and geriatricians
- NGOs and scientific societies
- Media
- Pharmacists, nurses, health visitors
- One health representatives

Relevance of alliance and cooperation
General Recommendations

- Need for EU level actions and studies: safety, efficacy, effectiveness, benefit-risk.
- Key role of public health authorities in the collection of data
- Clear roles and responsibilities of different stakeholders
- Funding models (complementarity between industry and public funding)
- Commitment to collaborative approaches and to explore valid suggestions (target diseases, biomarkers, improvement of reporting) to fulfil these objectives
Geriatric medicine

1. Harmonization of recommendations within Europe
2. Registries to record vaccine uptake, in order to be able to track performance in term of vaccine prescriptions and administrations by the variety of providers
3. Improve knowledge about safety and efficacy in the general population and health care professionals
4. Inform policy makers about cost/effectiveness of vaccine in older individuals
Recommendations from WGs

**Pharmacists, nurses, health visitors**

**Barriers to vaccinations:**

1. skepticism about integrity of pharma and doctors
2. skepticism about capacity of professionals other than physicians to give vaccines

**Incentives to vaccinations:**

1. reimbursement and increased Accessibility to vaccine (home nurses, pharmacists, etc)
Recommendations from WGs

Non-Governmental Organizations (NGOs)

1. NGOs can be a strong voice in favor of V, and using social media to spread impartial and evidence-based information about V to a wider audience as a promising means of communication

2. provide harmonized schedules of V and WHO could provide region-specific recommendations
1. Role in developing and improving vaccine efficacy
2. Increase manufacturing capacity, in order to avoid shortage and ensure pandemic preparedness
3. PI needs to be included as a full partner in discussions about vaccine implementation, as it is an instrumental partner in delivering the service in the field
Recommendations from WGs

**Media and science**

1. Anti-vaccine campaigners may be likened to soldiers: they are coordinated, organized, present a simple, but unified message and spread it via every available media.

2. Advocates of adult vaccinations should learn this strategy, to spread the pro-vaccine message in a timely, organized, systematic manner.
Recommendations from WGs

One-health

1. Role of veterinary medicine in the control of ID through collaboration with WHO
2. Emergence of new ID in selected countries
3. Use of antibiotics in animals and antibiotic resistance in humans
Outcomes

A truly multidisciplinary, multi-steps, coherent document for actions to be undertaken in order to overcome the current hesitancy and skepticism toward vaccination in older adults in Europe & to support the recommendations of the main scientific societies.