PANEL DISCUSSION: Optimal schedules for control of pneumococcal infection in countries with high and low carriage

Professor David Goldblatt, UCL – What we have learned from the UK on 1+1 vs 2+1
Age, Invasive Pneumococcal Disease and the Impact of Pneumococcal Conjugate Vaccines

Rate IPD/100,000

AGE

<2m 2-5m 12m 2-4y 5-9y 10-14 y 15-44y 45-65y 65-74y 75-79y >80y
Pneumococcal conjugate vaccine 13 delivered as one primary and one booster dose (1+1) compared with two primary doses and a booster (2+1) in UK infants: a multicentre, parallel group randomised controlled trial

Post Boost: Immunogenicity of a 1+1 schedule is equivalent to or superior to a 2+1 schedule for 9 of the 13 serotypes in PCV13

For both PCV10 and PCV13, 1+1 schedules were non-inferior to 2+1
Pneumococcal conjugate vaccine 13 delivered as one primary and one booster dose (1+1) compared with two primary doses and a booster (2+1) in UK infants: a multicentre, parallel group randomised controlled trial

Carriage at 12m and 18m of age: No difference between schedules

Immunogenicity of a single-dose compared with a two-dose primary series followed by a booster dose of ten-valent or 13-valent pneumococcal conjugate vaccine in South African children: an open-label, randomised, non-inferiority trial

Carriage at 9m, 15m and 18m of age: No difference between vaccines or schedules

Except
PCV13 1+1<2+1 VT type at 15m of age
Pneumococcal conjugate vaccine 13 delivered as one primary and one booster dose (1+1) compared with two primary doses and a booster (2+1) in UK infants: a multicentre, parallel group randomised controlled trial

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RESEARCH ARTICLE
Estimated impact of revising the 13-valent pneumococcal conjugate vaccine schedule from 2+1 to 1+1 in England and Wales: A modelling study

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PLOS MEDICINE

Joint Committee on Vaccination and Immunisation

1+1 implemented on January 1st 2020

Impact on IPD monitoring via PHE Surveillance system
Number of IPD Cases by month; all ages England, 2016/17-2020/21

1+1 policy introduction

Figure shown with permission: Zahin Amin-Chowdhury and Shamez Ladhani, Lancet Resp Med (submitted)
Future

Direct:
• Ongoing surveillance in the UK and evaluation in the light of the baseline perturbation. Will there be a rebound?
• Implementation in other countries with appropriate surveillance to assess impact

Indirect:
• Community based carriage studies in due course to inform impact