- 2.) Harrison LH, et al. Vaccine 2009; 27 Suppl 2: B51-63.
- 3) Rosenstein NE, et al. J Infect Dis 1999; 180: 1894-901.
- 4) Stephens DS. FEMS Microbiol Rev 2007; 31: 3-14.
- 5) Balmer P, et al. J Med Microbiol 2002; 51: 717-22.
- 6) Knuf M, et al. 28th Annual ESPID Meeting. Nice, France, 2010:abstract 712.
- 7) Knuf M, et al. 28th Annual ESPID Meeting. Nice, France, 2010:abstract 287.
- 8) Vesikari T, et al. 28th Annual ESPID Meeting. Nice, France, 2010:abstract 706.
- 9) Vesikari T, et al. 27th Annual ESPID Meeting. Brussels, Belgium, 2009:abstract 659.
- 10) Dbaibo G, et al. 3rd NECTM Conference. Hamburg, Germany, 2010:abstract 113.
- 11) Borja-Tabora C, et al. 6th WSPID Conference. Buenos Aires, Argentina, 2009:abstract 568.
- 12) Maurer H, et al. 28th Annual ESPID Conference. Nice, France, 2010:abstract 708.
- 13) Macalalad N, et al. 3rd NECTM Conference. Hamburg, Germany, 2010:abstract 112.

6

THE IMPORTANCE OF ROTAVIRUS DISEASE PREVENTION IN EUROPE

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Rotavirus (RV) is the leading cause of severe diarrhoea in children, annually causing >500,000 diarrhoea-related deaths in children aged < 5 years worldwide.¹ Since young infants can acquire the infection, there is a need for early protection.² In addition to the substantial burden of mortality (especially in developing countries) RV gastroenteritis (RVGE) has a considerable impact on the morbidity and quality of life of both affected children and their parents in Europe.³

The RV1/monovalent vaccine is an oral G1P[8], live-attenuated human rotavirus vaccine. RV1 has a two-dose schedule that can be completed by 10 weeks

of age and offers early protection against circulating RV strains. The vaccine has demonstrated efficacy against severe RVGE (90.4% [95%CI: 85.1-94.1]).^{4,5} Heterotypic cross-protection is the mechanism underlying the efficacy of RV1 in non-vaccine strains (79.2% [95%CI:8.9-96.5]); including the fully heterotypic G2P[4] strain.⁶ In trials and post-marketing surveillance (including 69 million doses), RV1 has demonstrated a clinically acceptable safety profile and has been generally well tolerated in healthy infants; furthermore, studies have shown no specific safety issues in high risk populations such as HIV-positive and pre-term infants.^{4,7,8}

Routine RV vaccination - mainly with RV1 - was implemented in Belgium in 2006, which resulted in a 53% decrease in peak incidence by 2007, with the highest decline in children aged < 1 years (81% reduction).⁹ In Austria, a 74% decrease in hospitalisation rates due to RVGE was observed compared to the era before the introduction of the vaccine.¹⁰ Similar trends were also observed in US with the RV5/pentavalent bovine-human reassortant vaccine.¹¹ New data from EuroRotaNet show the dynamic nature of rotavirus infection with the emergence of G8 and G12 strains.^{12,13}

Widespread implementation of RV vaccination would effectively reduce the European burden of RVGE and support the WHO recommendation for its inclusion into national immunisation programmes in countries that can afford the vaccine.¹⁴

References:

- 1) Parashar UD, et al. J Infect Dis 2009; 200 Suppl 1: S9-S15.
- 2) Han HH, et al. 6th Annual meeting of the World Society for Pediatric Infectious Diseases (WSPID), Buenos Aires, Argentina, 18-22 November 2009; abstract.
- 3) Van der Wielen M, et al. BMC Fam Pract; 11: 22.
- 4) Ruiz-Palacios GM, et al. N Engl J Med 2006; 354: 11-22.
- 5) Vesikari T, et al. Lancet 2007; 370: 1757-63.
- 6) Neuzil K et al. 27th European Society for Paediatric Infectious Diseases (ESPID) Brussels, Belgium, 9-13 June 2009; abstract 63.
- 7) Omenaca F, et al. 48th ICAAC/IDSA 46th annual meeting, Washington DC, October 25-28, 2008;

G1-442a.

8) Steele D, et al. 48th ICAAC/IDSA 46th annual meeting, Washington DC, October 25-28, 2008; G1-442b.

9) Hanquet G, et al. 27th European Society for Paediatric Infectious Diseases (ESPID) Brussels, Belgium, 9-13 June 2009; abstract O25.

10) Paulke-Korinek M, et al. *Pediatr Infect Dis J* 2010; 29: 319-23.

11) CDC. *MMWR Morb Mortal Wkly Rep* 2008; 57: 697-700.

12) Aladin F, et al. *J Clin Virol* 2010; 47: 340-4.

13) Iturriza-Gomara M, et al. *J Infect Dis* 2009; 200 Suppl 1: S215-21.

14) World Health Organization. *Wkly Epidemiol Rec* 2009; 84: 220-36.

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**OPTIMISING PREVENTION OF
PNEUMOCOCCAL DISEASE WITH
PNEUMOCOCCAL CONJUGATE VACCINES
PFIZER SYMPOSIUM, 23 OCTOBER 2010,
13:00-14:00**

N. Stephens

ESAT Vaccines, Pfizer, Paris, France

Paediatricians play a critical role in the battle against pneumococcal diseases, with a front-line position in its ongoing surveillance and prevention. The addition of pneumococcal conjugate vaccines (PCVs) to the armamentarium has dramatically changed the landscape in this battle; PCV7 was introduced almost a decade ago, and has been shown to have had a strong impact on all pneumococcal diseases caused by vaccine serotypes.

This symposium will open by looking at the burden of invasive and non-invasive pneumococcal disease across Europe, comparing the incidence and prevalence pre- and post-PCV7, and examining the impact of the different vaccination schedules in force.

Putting all this into practice, a member of our distinguished faculty will present an interactive case study on paediatric empyema, giving the audience the chance to vote and share their views on treatment strategies for invasive pneumococcal

diseases.

Finally, we will turn to consider the remaining burden of pneumococcal disease, looking at the broader coverage of the 13-valent PCV formulation, and the practicalities of transitioning from PCV7, as well as the opportunities for providing broader protection to already fully vaccinated children.

We very much hope you will join us for what promises to be a lively and educational event as we consider how best to optimise the prevention of pneumococcal diseases with PCVs.

8

**TREATMENT OPTIONS FOR NP-C: CHANGING
OUR APPROACH TO THE DISEASE**

M. Patterson

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Definitive disease-modifying therapy for Niemann-Pick disease, type C (NPC) would either correct the primary genetic defect or replace the deficient gene product [1]. Neither strategy is currently applicable to patients with *NPC1* mutations, but replacement of the NPC2 protein by haematopoietic stem cell transplantation is theoretically possible, although proof of principle in humans is lacking.

Alternative approaches involve interdicting pathways downstream to the primary mutation that lead to cellular dysfunction. These approaches include reduction of substrate burden, replacement of deficient downstream products, suppression of inflammation, inhibition of apoptosis and activation of alternate pathways. Of these approaches, only substrate reduction therapy has been studied and approved for use in humans.

Miglustat is an iminosugar that competitively inhibits glucosylceramide synthase, the enzyme catalysing the rate-limiting step in the synthesis of higher order glycosphingolipids. Miglustat has been shown to delay the onset of symptoms in the NPC murine model. Both prospective and retrospective human studies have also found evidence of a beneficial effect on disease progression in NPC [2-5]. The availability of such a treatment mandates early diagnosis of patients with NPC, since those without irreversible disease will be likely to benefit most. Currently, there is no readily available test for NP-C, but in future, oxysterols or other biomarkers may facilitate screening for NPC.