Meningococcal vaccination of crew members is warranted

Sir,

Rao *et al*.[1] recently discussed various aspects of the potential rare occurrence of bacterial meningitis and meningococcal septicaemia on board aircraft. As such incidents require immediate antibiotic treatment, the authors conclude that airlines and shipping companies should give careful consideration to the management of such events in the interest of patient wellbeing and survival. They designed a proposed care pathway, in order to start discussions and agree a consensus care-path algorithm to deal with emergencies, which also emphasises the need for greater awareness among, and training of, aircrews.

The measures proposed by Rao *et al*. are convincing and a useful basis for further discussion to optimise awareness and preparedness for treatment of meningococcal infections, but they omit any mention of vaccination to protect aircrew and significantly contribute to the control of possible meningococcal infections during flights. Rao *et al*. mentioned recent reports of infections by *Neisseria meningitidis* serogroup W-135 related to flights and travel to the Hajj pilgrimage, and the importation of meningococcal disease to pilgrims' home countries. In fact, clusters of W-135 meningococcal disease were reported in contacts in more than 16 countries worldwide following an outbreak in 2000.[2]

Meningococcal disease has a dynamic and unpredictable disease epidemiology caused predominantly by five different serogroups (A, B, C, W-135 and Y). Two regions with particularly high incidences of vaccine-preventable meningococcal disease are the area of sub-Saharan Africa known as the 'meningitis belt', and the Kingdom of Saudi Arabia during the annual Hajj and, to a lesser extent, Umrah pilgrimages. Travellers to regions with increased risk of acquiring meningococcal disease should be advised appropriately – indeed, meningococcal vaccination is a prerequisite for attending the pilgrimages in Saudi Arabia. Flight crew, who are in frequent close contact with individuals from all around the world, are at increased risk of acquiring meningococcal infections, which may develop into disease or be carried for further transmission of the pathogens. Therefore, I believe that there are strong medical grounds for a recommendation of meningococcal vaccination for all aircrew.

On approaching the International Air Transport Association (IATA) to ask about the existence of recommendations for vaccination of air crew against meningococcal disease, I was advised to consult the IATA Medical Manual.[3] This notes that "it is essential that all airline staff who travel are protected against the common endemic diseases by immunisation and malaria prophylaxis as appropriate" and, more specifically in the chapter entitled 'Vaccinations and Travel', "meningococcal meningitis occurs in epidemics in sub-Saharan Africa and in northern India during winter and early spring. As there are several strains of the bacteria that cause this disease, travellers should seek specific advice as to their risk from this disease". The IATA communication department advised me that decisions regarding vaccination of cabin crew are left with the individual carriers. However, responses from more than 20 airlines were either negative or inconclusive.

Vaccination recommendations should also consider the type of vaccine to be used and the issue of access, as not all types of vaccines are available globally. Several quadrivalent polysaccharide vaccines against meningococcal serogroups A, C, W-135 and Y are widely available for vaccination of crew members, but they provide a relatively short period of protection and may cause hyporesponsiveness with repeated doses.[4,5] A better alternative would be a quadrivalent meningococcal polysaccharide conjugate vaccine offering longer-term protection. Currently, however, only one such conjugate is licensed and is only available in North America, where it is recommended by the US Advisory Committee on Immunization Practices for routine vaccination of adolescents aged 11–18 years, and for all people aged 2–55 years of age at increased risk of disease, including travellers to specific areas of risk.[4,5]

Novartis has a quadrivalent polysaccharide conjugate under regulatory review in North America, the European Union and in some other countries worldwide. Other meningococcal conjugate vaccines are also in development. When these vaccines are licensed, access will no longer be an issue. A recommendation to vaccinate crew members with this type of vaccine is warranted in order not only to reduce the risk of serious and fulminant meningococcal disease for individuals, but also to block potential transmission and spread of bacteria and disease into other countries. Prophylactic meningococcal vaccination of crew members could contribute to the care pathway outlined by Rao *et al*.[1]

M. Bröker
Novartis Vaccines and Diagnostics
Global Medical Affairs
Emil-von-Behring Straße 76
35041 Marburg
Germany
Email: michael.broeker@novartis.com

Sir,

We read with interest the response from Dr Michael Bröker to our previous publication.[1] In his letter, Dr Bröker outlines the value of vaccination against meningococcal disease and articulates the value of vaccination for aircrews. We welcome this suggestion as an additional modality in the prevention of meningococcal disease, in addition to those detailed in our pathway, particularly for aircrew, all of whom may be in contact with high-risk individuals. Once available, we recommend that airline companies be notified and become aware of such quadrivalent polysaccharide conjugate vaccines, in order to undertake suitable risk assessments to help protect crews, where appropriate.

D. Rao *et al*.
Northern Ireland Public Health Laboratory
Department of Bacteriology
Belfast City Hospital
Belfast
Northern Ireland BT9 7AD
Email: jemoore@niphl.dnet.co.uk

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A new softening agent for use on formalin-fixed, paraffin wax-embedded tissue

Sir,

I read with interest the article by Orchard *et al*.[1] on the subject of softening agents for paraffin blocks in microtomy. Given that the authors were working in conjunction with CellPath, who provided them with reagents to test, I was surprised that no mention was made of an existing product of the same company, RDC Rapid Decalcifier. This reagent, when applied in a similar manner to that described by the authors, will soften and surface-decalcify the tissue in a trimmed paraffin block. The length of time of application will, of course, depend on the degree of hardness and/or calcification of the tissue. May I presume to suggest that the authors might, with advantage, include RDC Rapid Decalcifier in any further trials?

J. Difford
Adford Technical Services
Pinner
Middlesex HA5 4TY
Email: adford@compuserve.com

Reference

1 Orchard GE, Torres J, Poirier A et al. Investigation into a new softening agent for use on formalin-fixed, paraffin wax-embedded tissue. *Br J Biomed Sci* 2009: **66**; 63–6.

Sir,

In answer to my colleagues question regarding the recent article, I think it may be of value to clarify a few points. The original development of the new product did not in fact involve CellPath. The process of events followed a long and sometimes quite winding path. Having performed a literature search, it became apparent that there is not a standard and widely used tissue softener employed in histopathology. The majority of products are either commercially produced agents not primarily designed for use in histological laboratories, or are reagents which quite often contain noxious and harmful components, some of which are not popular with biomedical staff in many histopathology laboratories. Many of these products are also surface decalcifying agents and not tissue softeners in the true sense. The first publication involved an evaluation of a number of the non-decalcifying agents.[1] We attempted at this point to determine which reagents performed best on human nail tissue.

Following this publication, and having determined the most successful products, the chemist at CellPath was approached to provide guidance on identifying the components of these household reagents that most likely contributed to their successful application. Having determined the most likely components, formal collaboration with CellPath commenced and resulted in some trial samples.

At this stage, the desire was to produce a new histological product that would be CE-marked, would not have any significant health and safety risks, and would be produced for purpose and applicable for use in all histopathology laboratories.

What followed involved extensive communication between CellPath and the histopathology laboratory at St. John's, as various formulations were evaluated. This culminated in the second paper, to which my colleague refers,[2] and the introduction of the new softener, which was named CellSoft.

At this stage, consideration was given to comparing additional existing products which contained decalcifying agents. However, it was felt that this would be an option to explore with the development of a second version of CellSoft, and this is what we will be doing over the next 12 months. If successful, the new product would be called CellSoft2. In order to make this an appropriate test, we plan to incorporate all existing histopathology laboratories within GSTS Pathology services at Guy's and St. Thomas' NHS Trust in testing a full range of tissue types. The objective here is to produce a second version that will have all the benefits of the first, together with the advantage of applications to surface decalcify without significant increase in health and safety issues.

What is clear from the work carried out to date is that this area of histopathology is poorly understood. There is very little evidence in the literature of any analytical methodology being performed. There has been no attempt to establish any concept of working rationales. In the current climate of scientific research, this is essentially a 'Dickensian' perspective. Clearly, it is time to raise the bar, and it is essentially what these studies are attempting to do, and also to encourage debate.[3]

I thank my colleague for his comments and hope that I have offered a reasoned explanation to the queries raised.

G. E. Orchard
GSTS Pathology
St. Thomas' Hospital
Westminster Bridge Road
London SE1 7EH
Email: guy.orchard@gsts.com

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