**Prescribing Meningitis A C W Y Vaccine**

**Abstract**

This article will outline the transmission, risk and prevention of meningococcal meningitis ACWY associated with travel.

It will aid the decision making when considering prescribing this vaccine for the ‘at risk’ traveller and outline when an International Certificate of Vaccination should be issued.

Prescribers need to be understand the risk assessment process in relation to travel consultations, and have undertaken appropriate travel health training to ensure they have initial and ongoing competence.

**Key Words**

Meningitis, Meningococcal Meningitis ACWY, Vaccination, Travel health

**Key Points**

Meningococcal meningitis ACWY is a routine vaccination in the current UK schedule for relevant age groups.

Meningococcal meningitis ACWY may also be travel vaccine recommended for travel to certain areas.

Meningococcal meningitis ACWY vaccination is a mandatory requirement for visa applications for travellers to pilgrimages to Hajj and Umrah and for seasonal workers visiting the Kingdom of Saudi Arabia.

**Introduction**

Meningitis is a word that creates a sense fear in the mind of many people even with little medical knowledge, and it is a notifiable disease in the UK (Public Health England (PHE) 2016). Meningitis by definition is inflammation of the meninges, which are membranes surrounding the brain and spinal cord. Meningitis can affect anyone of any age but is most commonly seen in the young i.e. babies to young adults (NHS Choices, 2016). There are many causes of meningitis, some are vaccine preventable and others are not. Meningitis Now, a UK based charity, outlines a number of the types and causes on their website (Meningitis Now, 2018). Within the UK schedule vaccination offers prevention against some of the potential causes of meningitis disease, these include vaccines against selected meningococcal and pneumococcal serogroups, measles, mumps and rubella.

Meningococcal disease associated with Neisseria Meningitidis has 12 identified capsular subgroups (A, B, C, E, H, I, K, L, W, X, Y and Z), with B, C, W & Y formerly being the most common in UK. Prior to the introduction of Meningococcal Meningitis capsular group C vaccination (Men C), this capsular group was historically the predominant presenting cause of meningitis in the UK. Post introduction of the Men C vaccine and vaccination campaigns, the total numbers of meningitis cases reduced drastically, reportedly by as much as 90% , but capsular group B then accounted for the majority of cases and increasingly since 2009 capsular group W has been causing disease. Subsequently both Meningitis B (Men B) and Meningitis W (Men W) capsular groups have been introduced into the UK vaccination and immunisation schedule. (PHE 2016).

Vaccination against meningococcal meningitis capsular group C was initially introduced into the UK schedule for children in 1999, and then in the combined Meningitis C and Haemophilus B Influenza (HIB) vaccine in 2006. In 2015 Men B was added to the primary infant schedule and Meningitis ACWY to the school leaver schedule, the latter of which may need to be considered when discussing travel health with a patient depending on their age. (PHE 2017).

This article will focus on the vaccine preventable form of meningitis caused by the capsular groups ACWY from a travel health perspective.

Historically Meningitis AC and then Meningitis ACWY polysaccharide vaccine were the only available option in the UK for the protection of those travelling to areas of risk, but this vaccine is no longer manufactured which means that the conjugated Meningitis ACWY is now the vaccine of choice when required for travel purposes.

While the polysaccharide vaccinations stimulated an immune response in recipients, conjugation of vaccinates improves the length of protection and increases immunogenicity particularly in children (PHE 2016).

**Meningococcal disease**

In order for a person receiving a vaccine against any disease to make an informed choice they should be made aware of the disease in terms of how it is spread, the signs and symptoms and potential for exposure in the area that they are travelling to.

Meningococcal disease is transmitted by aerosol, droplets or direct contact with the respiratory secretions of a person who is carrying the organism (PHE, 2016). (World Health Organisation (WHO) (2018) report that between 1 and 10% of the population may carry the bacteria without showing signs of disease. Those carriers could spread the bacteria to contacts by coughing, sneezing or kissing. They also report that invasive disease is rare.

**Who is at risk?**

As part of the travel health consultation the prescriber should undertake a comprehensive risk assessment of their patient; it is not within the scope of this article to discuss all aspects of risk assessment with which you should be familiar before embarking on patient pre-travel consultations. For general information about risk assessment in travel refer to Royal College of Nursing (2018) and Chiodini et al (2012); but always remember to advise your patient that no vaccine is 100% effective (PHE 2013). In addition, an article by Umeed (2010) outlines the key issues about prescribing in a travel health consultation. Travellers who are considered at higher risk of meningococcal disease are detailed below.

WHO (2018) comment that there are no reliable estimates of the global burden of meningococcal disease and that it occurs in a range of situations from isolated individual cases or small clusters to epidemics and there is evidence of seasonal variation.

The map below highlights the distribution areas of the world for the vaccine preventable serogroups. (WHO) 2018a) 

Not every traveller from the UK to those countries identified in the map above will be at risk. PHE (2016) advise consideration be given to the itinerary, duration of stay and proposed activities as well as the areas visited that may expose the traveller to increased exposure risk. For a UK traveller the risk of acquiring meningococcal infection may be higher than in the UK (PHE 2016), particularly from capsular group A, which is not usually reported in UK and Europe (European Centre for Disease Prevention and Control (ECDC) (2018). ECDC (2018) report that capsular groups B and C predominate in Europe.

National Travel Health Network and Centre (NaTHNaC) (2018) lists those patients visiting high risk locations that would be considered as at particular risk including:

* Long stay travellers who have close contact with the local population
* Healthcare workers
* Those visiting friends and relatives (VFR)
* Those who live or travel ‘rough’ such as backpackers
* Individuals with no spleen or a poorly functioning spleen
* Individuals with certain immune deficiencies (NaTHNaC 2018)

Long stay travellers, healthcare workers and those VFR are at most risk of potential exposure due to either being in crowded situations or having prolonged close contact with local populations. The risk is exacerbated for those visiting the Hajj or Umrah where populations from a number of high risk countries come together in close proximity and often with significant overcrowding.

Those who live or travel rough may find themselves at a distance from or have limited access to medical facilities whereby any delay in getting medical attention could lead to potentially debilitating outcome if .

Those patients with no spleen, splenic dysfunction or immune deficiencies are at increased risk of meningococcal disease and those who have had a splenectomy may have a poorer response to the vaccination (PHE 2016).

Having access to the patients’ medical and vaccination history is important as some individuals may have received Meningitis ACWY vaccination as part of their routine care management for example patients who have had their spleen removed or have a dysfunctional spleen, or since 2015 received the vaccine as part of the routine UK schedule which is recommended around the age of 14 (PHE 2016).

From a UK travel perspective the disease risk is most commonly associated with travel to what is known as the ‘meningitis belt’ of sub-Saharan Africa. This is an area that extends from East to West Africa (Centre for Disease Control and Prevention (CDC) 2017).



(CDC 2017)

NaTHNaC (2018) comments that the dry season is the time when most outbreaks occur and with serogroup A being the most common cause. There have also been several large outbreaks of meningitis capsular groups A and W associated with Hajj and Umrah pilgrimages to the Kingdom of Saudi Arabia and there is now a requirement for pilgrims to prove they have had their quadrivalent vaccination before a visa is issued (PHE 2016).

**How can an individual protect themselves?**

Key is to avoid areas where there are known outbreaks or epidemics of vaccine preventable meningococcal disease; this information can be located on the NaTHNaC (2018a) website in the country specific information pages that both the public and travel health advisors can freely access.

An individual should avoid, where possible, high risk activities such as those listed above. Particularly avoiding close lengthy contact with the bacteria which include avoiding sharing respiratory or throat secretions (for example from kissing and coughing) (CDC 2017a) which poses greater risk.

Essentially the main preventive measure that an individual can take is to have a vaccination to protect against Meningitis ACWY if it is recommended for the area they are travelling to. This is often a difficult decision and discussion as this vaccine is not freely available from the NHS unless being administered as part of the UK vaccination schedule.

**Vaccination**

The ‘Green Book’ (PHE 2016) recommended use of Meningococcal ACWY vaccination for travel as outlined below.



There Electronic Medicines Compendium (EMC) lists two manufacturers of meningitis ACWY conjugate vaccines with one company having two presentations. (EMC 2018)



As a prescriber you should review the summary of product characteristics (SPC) for the particular brand of vaccine you have available (EMC, 2018a, 2018b, 2018c) to determine the composition of the vaccine and excipients, both important information when considering allergies. In addition, a full list of adverse reactions are listed one the relevant EMC pages. It should also to be noted that the ‘Green Book’ (PHE 2016) information supersedes the SPC where discrepancies of advice for vaccine recommendations exist.

NaTHNaC (2018) raises awareness to the manufactures marketing authorisation of the two available Meningitis ACWY vaccines, with Menveo ® (EMC 2018a) authorised from two years of age, and Nimerix ® (EMC 2018b & c) in both presentation format, is authorised for use from six weeks of age. Any administration of the vaccine outside of this recommendation would be considered as ‘off licence’, i.e. outside of marketing authorisation, which may be acceptable in particular circumstances and the prescriber would be responsible for their clinical judgement (PHE 2013a).

**Certification for Hajj and Umrah and seasonal workers.**

In 2018 the Hajj will fall between Sunday 19th August to Friday 24th August. In order to obtain a visa to attend pilgrimage or for seasonal work, all adults and children over two years of age travelling from the UK are required to have a certificate of vaccination against the quadrivalent Meningitis ACWY that was issued no more than five years and no less than ten days before their arrival in Saudi Arabia. It must also clearly state that it was the conjugated vaccine that was given, so including the brand would be advantageous. Failure to state which vaccine given may result in the certificate only being valid for three years, as it will be assumed that the polysaccharide vaccine was given although this is no longer manufactured or routinely available in the UK. (The Ministry of Health of Saudi Arabia 2017).

If a traveller already has International Certificate of Vaccination or Prophylaxis (ICVP) booklet, then the meningococcal ACWY vaccination can be recorded in the ‘Other Vaccinations’ pages (NaTHNaC 2017). Alternatively, the product may contain a certificate within the packaging or you can prepare your own on practice headed paper.

**Charges:**

If the Meningitis ACWY vaccine is being administered to someone who is eligible as part of the UK vaccines schedule then you cannot charge for administration of the vaccine, though if a certificate is required your practice may wish to impose a charge for this. When administered outside of the UK schedule then a fee can be charged for vaccination and certification. It is good practice to have a practice protocol about fees to be charged for services outside the standard general practice contract and to advertise these either on the waiting room, on the practice website and in the practice leaflet.

**Conclusion**

Meningitis is a disease that has many causes. Within the UK children are routinely being offered vaccination against a number of capsular groups of meningococcal meningitis infection depending on their age. Additionally for travel purposes Meningitis ACWY vaccination may be recommended or mandatory for visa access when travelling to certain areas of the world. As a travel health advisor due consideration should be given to a holistic risk assessment for each individual traveller. You should also be aware of the disease epidemiology, signs, symptoms and potential effects of the disease in order to ensure your patient makes an informed decision to have or decline the vaccination. You also need to know about the drug you are prescribing and or administering. Where vaccination is mandatory for the purposes of travel you need to be aware of the certification requirements and take due care in completing this document.

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Reflective questions:

Which of the meningococcal serogroups are included in UK schedule vaccination programme?

What activities would increase the risk of exposure for a traveller?

When is a certificate for meningococcal vaccination required?

How could this article be utilised to change your practice?