Prescribing Tips for Anticoagulants. For many years, warfarin has been the only licensed oral anticoagulant available on the market in Ireland. A number of new oral anticoagulants (NOACs) are now authorised / available. Usage of the NOACs has steadily increased, as prescribers consider their potential benefits (including the predictable anticoagulant effect without the requirement for regular monitoring, lower rates of intracranial haemorrhage and the reduction in potential drug interactions). However, the NOACs are not without adverse effects, including the risk of major GI haemorrhage (http://www.hse.ie/eng/about/Who/clinical/natclinprog/medicinemanagementprogramme/NOACs.pdf). The expansion of the licensed indications has led the Medicines Management Programme (MMP) to produce a prescribing guide to assist in the safe and effective prescribing of the NOACs. The guide highlights concerns in relation to appropriate dosing (which may need to be altered according to indication, renal function and degree of bleeding risk), the lack of specific antidotes available for potential haemorrhagic complications and the risk of thrombotic events due to incorrect dosing (due to their short half-life). For each NOAC, a tabular summary of the licensed indications (and dosage regimen according to indication, renal function and bleeding risk) is provided, together with the potential for major drug-drug interactions with the individual NOAC. The guide also summarises the studies supporting the main indications. The MMP prescribing guide reminds prescribers that warfarin is the established anticoagulant of choice for many patients including those with mechanical heart valves, valvular atrial fibrillation and patients with severe renal impairment. The MMP guide is available to download at: www.hse.ie/yourmedicines (under prescribing tips and tools). This website also contains prescribing tips for other medicines, currently included as part of the MMPs Preferred Drugs Initiative. [Editor’s note: The NMIC issued two bulletins on the NOACs and the management of non-valvular atrial fibrillation in early 2013; these can be downloaded at: http://www.stjames.ie/GPsHealthcareProfessionals/Newsletters/]

Meningococcal C disease. The incidence of meningococcal C disease reduced dramatically in Ireland from 139 cases notified in 2000 to one case in 2013 (Epi-Insight September 2014;15(9)). The reduction in incidence was due to the introduction of the meningococcal C (MenC) conjugate vaccine in October 2000 to the infant schedule and due to the catch-up campaign targeted at people <23 years of age at the same time. There have, however, been 4 cases of invasive meningococcal C disease notified in the first six months of this year, which is the highest in any six month period since 2005. The median age of the cases was 52.5 years (the youngest was in the 15-20 year age group and the eldest was in the 75-79 year age group). The youngest case was unvaccinated and was a recent arrival to Ireland. There were no fatalities and no additional risk factors among the cases. Meningococcal C infection is typically associated with higher morbidity and mortality rates in adolescents and young adults than in other age groups. The recent increased incidence of meningococcal disease suggests an increase in carriage and transmission of Meningococcal C in the community. This finding is consistent with recent studies in the UK which have indicated a degree of reduced immunity in children vaccinated in the first year of life. The National Immunisation Advisory Committee has recently updated their guidance and now recommends a MenC vaccine booster dose at 12 years of age in order to boost immunity. The Health Service Executive (HSE) will be implementing a MenC vaccination booster programme to first year secondary school students during the 2014-2015 academic year, the details of which will be announced at the start of the academic year. Epi-Insight notes that the current recommendations for vaccination against meningococcal C are:

- MenC vaccination should be given to all children as per the primary childhood vaccination schedule
- All unvaccinated individuals <23 years of age should receive a dose
- Immunocompromised or older individuals may require additional dose(s) of MenC-containing vaccine

[Editor’s note: Further information is available on the Health Protection Surveillance Centre (HPSC) website www.hpsc.ie and you can subscribe to Epi Insight by going to http://bit.ly/epiinsight and follow the HPSC on Twitter @hpscireland]
**Conjunctivitis (CJ)** is the most frequently diagnosed cause of an acute red eye, and is responsible for up to 4% of disorders seen in primary care (Prescriber July/August 2014:22-31). The condition varies from mild hyperaemia and tearing to severe CJ with copious purulent discharge (rarely it is sight threatening caused by irreversible scarring).

**Clinical features:** **Symptoms** include tearing, discomfort, stinging or burning. CJ may be associated with photophobia and blurring, however alternative conditions such as autoimmune causes (e.g. uveitis), orbital pathology (e.g. carotid cavernous fistulae), severe dry eye, ocular neoplasia, orbital cellulitis and acute glaucoma should be considered in these patients. **Signs** include a discharge which varies with different causes; a watery discharge is associated with acute viral or allergic inflammation while a purulent discharge is associated with acute bacterial CJ. Additional signs depending on the cause include conjunctival reactions, membranes and lymphadenopathy. It is important to appreciate that not all “red eyes” are CJ; alternative diagnoses should be considered for cases that are sub-acute in onset, not responding to treatment or that are associated with other symptoms such as reduced vision, photophobia, double vision or significant eye pain. There should be a lower threshold for referral to an ophthalmologist for patients with a history of a corneal graft or glaucoma surgery.

**Bacterial conjunctivitis (BCJ)** can be classified as acute and chronic. **Acute BCJ** is characterised by rapid onset of conjunctival redness, mucopurulent discharge, lid swelling, symptoms of grittiness or burning; it typically begins in one eye and spreads to the second eye within days. It is caused by a number of organisms including *Staphylococcus (S.) epidermis, S. aureus, Streptococcus pneumonia* and *Haemophilus influenza*. BCJ can be self-limiting, taking up to 2 weeks to resolve; treatment with appropriate antibiotics shortens the infection to 1-3 days. The treatment of choice in a primary care setting includes topical chloramphenicol or fusidic acid. Topical chloramphenicol should not be prescribed to patients with a personal or family history of haematological disorders. Alternative treatment includes topical ofloxacin and moxifloxacin. Topical aminoglycosides such as gentamicin (associated with corneal toxicity) can be used if a gram-negative organism is suspected. *Gonococcal CJ* should be considered in a patient presenting acutely with profuse purulent exudates and oedematous tender eyelids; this may progress to corneal perforation, endophthalmitis and rarely septicaemia and meningitis. Hospitalisation may be required and investigations include conjunctival swabs and blood cultures. Treatment includes topical gentamicin and intravenous cephalexin, in addition to referral to a genitourinary clinic (GUC) for screening for other sexually transmitted infections. **Meningococcal CJ** is seen in children and may be associated with life threatening septicaemia and meningitis; treatment with oral ciprofloxacin in addition to topical antibiotics is required. **Chronic BCJ** defined as CJ persistent for > 3 weeks, may occur due to an anatomical obstruction or due to chronic colonisation with organisms such as *S. aureus*; appropriate treatment requires identification of the underlying cause. *Chlamydial CJ* is an important cause of chronic BCJ; patients present with subacute-onset mucopurulent discharge/chronic non-resolving CJ, which can persist for up to 12 months if untreated and may have associated tender lymphadenopathy. Referral to a GUC is imperative for management and contract tracing. **Neonatal chlamydial CJ** usually presents 5-19 days after birth with a mucopurulent discharge and may be associated with systemic infection; infection occurs via genital secretions through the birth canal. It is important that the mother and her partner are also investigated and treated.

**Viral conjunctivitis (VCJ)** can be caused by a number of viruses, the most common being adenovirus. Patients present with redness, acute watering and discomfort, followed by photophobia from epithelial and subepithelial keratitis 5-14 days later. Additional features include eyelid oedema, fever, pharyngitis and lymphadenopathy. Transmission is highly contagious; the virus is shed for up to 12 days following onset of the CJ. The condition resolves usually in 2 weeks and treatment is predominantly supportive. VCJ can also be caused by *herpes simplex virus*; clinical features include herpetic vesicles on the eyelids or lid margin with lid swelling and follicular CJ. Treatment is with topical aciclovir (systemic aciclovir is indicated in chronic or recurrent cases).

**Allergic/toxic conjunctivitis** can be subdivided into allergic rhinoCJ (ARC), vernal keratoCJ (VKC), atopic keratoCJ (AKC) and giant papillary CJ (GPC). **ARC** which occurs in response to specific airborne agents is treated with topically applied mast cell stabilisers (e.g. sodium cromoglicate, lodoxamide), topical antihistamines (e.g. azelastine) or a combination of both (e.g. olopatadine). **VKC** also known as “spring catarrh”) is a self-limiting condition mainly affecting prepubertal boys and young adults living in warm dry climates. Patients present with extreme ocular itching and other signs including papillary CJ of the upper tarsal conjunctiva. It is treated in a similar way to ARC; topical steroids may be required for severe cases (which should be under specialist advice). **AKC** typically affects young men with atopic dermatitis and presents in a similar way to other forms of allergic CJ. It persists for many years and is associated with high rates of significant visual morbidity and chronic staphylococcal blepharitis. Treatment is similar to that of VKC but may require more prolonged therapy and topical antibiotics. **GPC** is seen in patients wearing contact lenses and those with plastic artificial eyes; the signs and symptoms resemble VKC. Patients with GPC due to contact lenses may require a change in the duration of lens wear, change of cleaning solution or change in type of lens while those with artificial eyes should be seen by an ophthalmologist.

**Conclusion** Most cases of CJ are self-limiting and resolve within 3 weeks; antibiotic therapy will shorten the duration of the bacterial infection. There are various causes of CJ; correct diagnosis and treatment is important to avoid complications. Referral to a hospital is indicated if the CJ does not improve. Topical steroids should be prescribed under the supervision of an ophthalmologist to avoid worsening of undiagnosed infection, corneal melt or undetected glaucomatous visual loss.

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Every effort has been made to ensure that this information is correct and is prepared from the best available resources at our disposal at the time of issue. References are available on request. This newsletter is produced by the National Medicines Information Centre, St. James’s Hospital (SJH) Dublin 8 and Dept of Therapeutics Trinity College, Trinity Centre, SJH. Tel: Direct Line (01) 473 0589 or 1850 727 727 Fax: (01) 473 0596 Email: nmic@stjames.ie