Clostridium Difficile Infections (CDI) and Dental Antibiotic (AB) Prescribing

Clostridium Difficile Infections are serious infections of the gut commonly associated with the prescribing of antibiotics. They have a 13.8% mortality rate, are associated with significant pain for patients and are difficult to treat. There has been a spike in the incidence of these infections in Kent and Medway over the last year and currently we have the 3rd highest rates of the 42 ICBs across the country. More worryingly the data coming through suggests 5% of CDIs are a result of dental AB prescribing.

This post has been written to give dentists further information to help them reduce the risk of CDI infections.

Consent

Consent, or more the lack of it, is the main reason for success in litigation cases against health care professionals. Informed or valid consent can only be established when a patient has been properly informed of the risks and benefits of any proposed treatment. Healthcare professionals are not good at obtaining consent before prescribing antibiotics. Given the relatively high mortality and morbidity rates attributable to CDIs resulting from ABs, in the event of a death from this infection it is likely that the appropriateness of the prescription may be scrutinised by interested parties and if the dentist properly informed the patient of the risks from it. Make sure you are familiar with the guidance documents from the Scottish Dental Clinical Effectiveness Programme (**SDCEP**) and the College of General Dentistry (**CGDent**) on AB prescribing in dentistry. If you are prescribing outside of these guidelines then make sure you record properly in your notes the reasons for this.

Risk Factors

1. **Antibiotics**

Although CDIs can occur with many antibiotics, it is more common with some and when combinations of ABs are used at the same time, or if there have been repeated courses over a short period of time. There are 4 ABs beginning with the letter C that are the most commonly associated with CDIs. When a GP is prescribing any one of these, a red flag comes up on their computer to remind them of the risk. We don't have this benefit in dentistry so it important to be familiar with current guidelines when prescribing ABs.

The most commonly associated AB with CDIs is **Co-Amoxiclav**. The other 3 C's are **Clindamycin**, **Cephalosporins** and **Ciprofloxacin**. 3 of these 4 C's are listed in the dental formulary; Co-Amoxiclav, Clindamycin and Cephalosporins. None of these is recommended as 1st choice ABs for dental infections and the CGDent guidelines advise that before prescribing any of these, specialist advice should be obtained. Clindamycin is the preferred AB for prophylaxis when patients are allergic to penicillin. Prophylaxis for implant placement should only be considered when bone grafting is also involved.

The exception for the prophylactic use of Clindamycin is when patients are allergic to penicillin in cases of acute oro-antral communications (OAC). In these cases, the 1st line AB is Phenoxymethyl Penicillin (Pen V) (and **not** Amoxicillin), and for patients allergic to penicillin it is Doxycycline or Clarithromycin (and **not** Clindamycin).

2. **Proton Pump Inhibitors (PPIs)**

Proton pump inhibitors are amongst the 4 most commonly prescribed drugs in this country and even dentists can now prescribe them. However, many dentists are unaware that PPIs cause significant disruption to the gut microbiome. A paper in the British Medical Journal (BMJ) in 2015 identified that PPIs are responsible for profound changes to the gut microbiome resulting in the death of healthy gut bacteria. This condition is described as **Gut Dysbiosis**. PPIs double the risk of CDIs when associated with the prescription of ABs. A recent data report for the Dartford Gravesham acute trust identified that 94% of their CDI cases were patients who were on PPIs and had been given ABs.

3. **Patient Factors**

Most CDI cases occur in patients over the age of 65. Comorbidities such as IBD (Inflammatory Bowel Disease) and immunocompromised patients also increase risk. Also at risk are patients with severe underlying disease and or renal insufficiency. Be careful when prescribing in these cases and make sure you both conform to guidelines and give the patient appropriate warnings.

A previous history of CDI is also a risk factor for repeat infections and practices may wish to revisit their medical history questionnaires to include this as a question. Patients who have been treated in secondary care for CDIs are supposed to be given a green warning card advising health care professionals of their increased risk. However the patient may not produce this card and may not remember.

4. **Aide Memoire**

There is a single page aide memoire that can be downloaded from this website to help dentists with their AB prescribing and it includes contact details for specialist advice. General advice on Antimicrobial Prescribing & Resistance in Dental Practice is available here.

Tim Hogan

April 2024