



Penny Asbell

What's best for bacterial conjunctivitis?

Devon Schuyler
in Las Vegas

OPHTHALMOLOGISTS faced with bacterial conjunctivitis need to consider carefully which antibiotic to use, or not to use, Penny Asbell MD told a session of the annual AAO meeting.

Newborns with acute bacterial conjunctivitis – and all patients with hyperacute bacterial conjunctivitis – require rapid diagnosis and treatment to avoid corneal damage and vision loss, she said. By contrast, acute bacterial conjunctivitis in children and adults is usually self-limiting, although they also can benefit from antibiotic treatment. Chronic conjunctivitis is rare, and the ophthalmologist needs to rule out other causes such as allergy, or toxicity from chronic eye medication use.

“Bacterial conjunctivitis seems like a straightforward subject, but it's not. A variety of different pathogens can lead to the condition, and many of those pathogens are gradually developing antibiotic resistance”

Penny Asbell MD

“Bacterial conjunctivitis seems like a straightforward subject, but it's not. A variety of different pathogens can lead to the condition, and many of those pathogens are gradually developing antibiotic resistance. We will be looking for new antibiotics to treat this condition in the future,” said Dr Asbell, who is professor and director of cornea and refractive services at Mount Sinai School of Medicine in New York City.

The most common causes of acute bacterial conjunctivitis are *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in neonates; *Haemophilus influenzae*, *Streptococcus pneumoniae*, and *Moraxella catarrhalis* in children; and *Staphylococcus aureus*, *S pneumoniae*, and *H influenzae* in adults. Hyperacute bacterial conjunctivitis, which can lead to significant loss of vision if left untreated, is typically caused by *Neisseria* species such as *N gonorrhoeae*.

Chronic conjunctivitis, which Dr Asbell called the “bread and butter of conjunctivitis that most of us see”, is usually caused by *Staphylococcus* species. This type of conjunctivitis is often associated with rosacea, blepharitis or facial seborrhea.

Dr Asbell said that ophthalmologists should always use antibiotics in cases of ophthalmia neonatorum, which is caused by organisms acquired from the birth canal during delivery. A neonate infected with *N gonorrhoea* will develop acute conjunctivitis with severe pus production, and should be treated quickly to prevent corneal damage and loss of sight.

Other patients with bacterial conjunctivitis also can benefit from antibiotic treatment, which will speed recovery, reduce relapse, and prevent important potential sight-threatening complications such as orbital cellulitis, keratitis and panophthalmitis.

Sight-threatening complications appear to be rare, however. A recent Cochrane review of acute bacterial conjunctivitis – which looked at five clinical trials with a total of more than 1000 participants randomised to receive either antibiotics or a placebo – found that no patients experienced serious complications. The review concluded that antibiotics can help speed clinical and microbial remission, but also found out that most cases resolved spontaneously without treatment (*Cochrane Database Syst Rev 2006;19:CD001211*).

Which antibiotic regimen?

Bacterial conjunctivitis is only rarely treated with systemic antibiotics unless it is secondarily considered as part of a systemic infection, such as *Chlamydia*.

Topical antibiotics are more commonly used. A combination of systemic and topical antibiotics is used to treat *Neisseria* infections.

Eye drops are usually preferred over ointments for bacterial conjunctivitis. Some common eye drops are trimethopim-polymyxin B (Polytrim) and the fluoroquinolones ofloxacin (Ocuflax, Allergan), ciprofloxacin (Ciloxan), levofloxacin (Quixin, Santen), moxifloxacin (Vigamox, Alcon), and gatifloxacin (Zymar, Allergan).

“Methicillin-resistant *S aureus* is taking over. We can't be static in our thinking, we need to be looking for new antibiotics”

Penny Asbell MD

Dr Asbell emphasised the importance of following standard dosing, which usually involves one dose every two to four hours for the first two days, followed by less-frequent doses from days three to seven.

“Treatment is seven days, not two weeks, and we're not tapering. The antibiotics work best if you give the full dose and then stop, none of this tapering madness.”

The choice of antibiotics has been greatly aided by the TRUST (Tracking Resistance in the United States Today) program, which is the largest longitudinal surveillance programme in the US. Over the past decade, this ongoing programme has tested more than 75,000 isolates collected from more than 200 institutions. A subset of this programme looking just at the eye isolates from ocular infections started in 2005.

The Ocular TRUST study found that 100 per cent of *S pneumoniae* and *H influenzae* was susceptible to levofloxacin, gatifloxacin and moxifloxacin in 1999, and that 100 per cent of these bacteria continued to be

susceptible in 2006. By contrast, these antibiotics are effective against only about 20 per cent of methicillin-resistant *S aureus* strains, said Dr Asbell.

In an analysis of The Surveillance Network database, other research sponsored by Ortho-McNeil Pharmaceuticals has found that resistance of *S aureus* isolates to methicillin has increased from about 25 per cent in 1993 to nearly 50 per cent in 2003.

“Methicillin-resistant *S aureus* is taking over. We can't be static in our thinking, we need to be looking for new antibiotics,” said Dr Asbell.

She recommended that ophthalmologists reduce resistance to topical antibiotics by using high concentrations of highly soluble bactericidal drugs at a high dose frequency, by being aggressive with keratitis, and by limiting the duration of antibiotic use.

Eduardo C Alfonso MD, who chaired the session, told *EuroTimes* that bacterial conjunctivitis is a “very important” subject for the general ophthalmologist.

“The appropriate diagnosis and treatment are important for shortening the length of the infection,” said Dr Alfonso, who is the Edward WD Norton Professor of Ophthalmology at Bascom Palmer Eye Institute in Florida.

penny.asbell@mssm.edu
ealfonso@med.miami.edu