When should acute nonvenereal conjunctivitis be treated with topical antibiotics?

EVIDENCE-BASED ANSWER

Children with suspected or culture-proven acute nonvenereal bacterial conjunctivitis should be treated with topical antibiotics, which hastens clinical and microbiological remission and may prevent potentially serious morbidity. In light of recent evidence regarding the self-limiting nature of conjunctivitis in adults and the development of antibiotic resistance, a "wait-and-see" approach with careful follow-up may be reasonable for adults, but this approach has not been evaluated. (Grade of recommendation: C, based on extrapolation from systematic reviews of specialty clinic trials and cohort studies.)

EVIDENCE SUMMARY

Conjunctivitis accounts for 1% to 2% of office visits to primary care practitioners.[1] Conjunctivitis is more commonly caused by bacteria in children (50% in 1 study[2]) than in adults, in whom viral conjunctivitis predominates.[3] Treating suspected or culture-proven acute bacterial conjunctivitis with topical antibiotics significantly shortens the clinical course of the disease and results in higher microbiological cure rates than placebo.[1,4,5] A meta-analysis of 3 trials based in specialty clinics or hospitals reported significant clinical cure or improvement of bacterial conjunctivitis with 2 to 5 days of topical antibiotics compared with placebo (RR = 1.31, 95% CI, 1.11-1.55, number needed to treat = 5).[1] Other articles have reported corneal or systemic complications of bacterial conjunctivitis. For example, 1 review reports that 25% of children with *Haemophilus influenzae* conjunctivitis develop otitis media.[2]

Although there is a small risk of complications and longer time course when bacterial conjunctivitis is left untreated, the disease is often self-limited, with a 64% clinical remission rate in patients treated for 2 to 5 days with placebo.[1] The rate of spontaneous remission is much higher for adults than for children (71.6% vs 28%, respectively). The Cochrane meta-analysis reported a similar clinical cure rate in children for 6 to 10 days of treatment with topical antibiotics versus placebo. A systematic review of 5 placebo-controlled RCTs reported no serious adverse outcomes in conjunctivitis patients regardless of treatment group.[4]

Antibiotic resistance is a growing problem. Studies of fluoroquinolone resistance rates report a range of 4% to 50% for ocular bacteria.[6] The 50% resistance rate occurred after 4 weeks of topical treatment in postcataract surgery patients.

Overall, this evidence suggests that for adults, watchful waiting rather than initially treating with antibiotics is reasonable, given the self-limited nature and lack of serious outcomes in untreated patients as well as growing concern about antibiotic resistance. Note that this recommendation applies only to acute nonvenereal conjunctivitis. It is generally accepted that conjunctivitis caused by gonococcus or chlamydia should be suspected in all newborns and in severe cases in sexually active young adults. These cases warrant culturing and antibiotic treatment to prevent serious complications.[7]

RECOMMENDATIONS FROM OTHERS

The American Optometric Association consensus guideline states that ideal treatment should be based on the specific causative organism. The guideline concludes that treatment of bacterial conjunctivitis with antibiotics can reduce symptoms, duration of illness, and chances of recurrence.[8]

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Members of the Family Practice Inquiries Network answer clinical questions with the best available evidence in a concise, reader-friendly format. Each peer-reviewed answer is based on a standard search of resources, including MEDLINE, the Cochrane Library, and InfoRetriever, and is graded for level of evidence (http://cebm.jr2.ox.ac.uk/docs/levels.html). The collected Clinical Inquiries can be found at http://www.jfponline.com and http://www.fpin.org; the latter site also includes the search strategy used for each answer.

What is the most effective treatment for external genital warts?

EVIDENCE-BASED ANSWER

Podofilox (Condylox), imiquimod (Aldara), cryotherapy, and surgical options all seem reasonable alternatives that are superior to podophyllin. (Grade of recommendation: B, based on systematic review.) No studies of surgical options versus home use preparations have been reported. Trichloroacetic acid and 5-fluorouracil (5-FU) have not been sufficiently studied.

EVIDENCE SUMMARY

Nonsurgical treatments that are beneficial in eradicating genital warts are podofilox (Condylox) (8 randomized controlled trials [RCTs] with 1035 participants), imiquimod (Aldara) (2 RCTs with 968 participants), and intralesional interferon (8 RCTs). Cryotherapy is equivalent to trichloroacetic acid[1,2] and electrosurgery.[3] Although surgical treatments have not been compared with placebo or no treatment, both electrosurgery and surgical excision are superior to podophyllin in clinical trials.[4,5] Laser surgery is as effective as surgical excision.[6] Studies of topical interferon show conflicting results.[7] Systemic interferon is not beneficial.[7] Topical 5-FU has not been studied with RCTs. Wart clearance rates are summarized in the Table. Treatment duration for nonsurgical options is 4 to 8 weeks. Treatment of genital warts has not been shown to reduce transmission to sex partners.[7]

Two RCTs[4,5] showed more frequent recurrence with podophyllin (60% to 65%) than with surgical excision (19% to 20%). Another trial[1] showed recurrence in 22% of participants receiving electrosurgery, in 21% of those receiving cryotherapy, and in 44% of those receiving podophyllin treatment. Data are lacking on recurrence rates with imiquimod, podofilox, and intralesional interferon.

Pain occurs in less than 20% of people with imiquimod, cryotherapy, podophyllin, and electrosurgery; 39% with topical interferon; 44% with electrosurgery; 75% with podofilox; and 100% with surgical excision or laser surgery.[7] However, pain has been measured using methods that are unlikely to be comparable across studies. Flulike symptoms, leukopenia, thrombocytopenia, and elevated aspartate transaminase levels are associated with intralesional interferon.[7] Topical medications have not been studied in pregnant patients. Cryotherapy is safe in pregnancy based on case series, if only 3 or 4 treatments are given.[7]

Direct comparisons between home therapies (imiquimod, podofilox) and other treatments are needed. Products for home use are relatively expensive: a 1-month supply of imiquimod costs approximately $150; a 1-month supply of podofilox, $110 to $130. These are average wholesale prices, rounded to the nearest $10, as of Feb. 15, 2002.

TABLE

CLEARANCE RATES REPORTED IN CLINICAL TRIALS

Therapy	Clearance Rate (%)
Cryotherapy	63–88
Electrosurgery	61–94
Imiquimod	37–56
Interferon (topical)	6–90
Interferon (intralesional)	17–63
Laser surgery	23–52
Podofilox	45–77
Podophyllin	32–79
Surgical excision	35–72
Trichloroacetic acid	50–81
Placebo or no treatment	0–56

RECOMMENDATIONS FROM OTHERS

The CDC endorses podophyllin, bi- and trichloroacetic acid, podofilox, imiquimod, cryotherapy, intralesional interferon, electrosurgery, laser surgery, and surgical excision.[8] A United Kingdom guideline on anogenital warts recommends physical ablative methods such as cryotherapy and surgical options for keratinized lesions and topical medications for soft lesions. The guideline also recommends ablative therapy for persons with a small number of warts regardless of type. Interferon and 5-FU are not recommended.[9]

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What are the indications for tonsillectomy in children?

EVIDENCE-BASED ANSWER

Tonsillectomy with or without adenoidectomy is minimally effective when combined with tympanostomy tube placement in preventing recurrent otitis media in the 3 years following surgery. The risks of surgery must be weighed against potential benefit. (Grade of recommendation: B, based on low-quality randomized controlled trials [RCTs]). The evidence supporting tonsillectomy for recurrence of sore throat is controversial.[1] There is insufficient evidence to recommend other potential indications (Table). (Grade of recommendation: C, based on case series.)

TABLE

INDICATIONS FOR TONSILLECTOMY

Potential Indication	Evidence of Effectiveness?	Grade of Recommendation
Preventing recurrent otitis media in the 3 years following surgery	Yes, small effect size	B (RCTs, case series)
Preventing recurrent sore throat caused by tonsillitis	No	B (systematic review of flawed RCTs)
Preventing recurrent peritonsillar abscess	No	C (case series, consensus statements)
Treating sleep apnea in children	No	C (case series[2])
Treating IgA nephropathy	No	C (case series)
Treating guttate psoriasis	No	C (case series[3])
Treating nocturnal enuresis	No	C (case series)

IgA denotes immunoglobulin A; RCTs, randomized controlled trials.

EVIDENCE SUMMARY

Cochrane: "There is no evidence from randomized controlled trials to guide the clinician in formulating the indications for surgery in adults or children."[1] The few existing trials are complicated by differences in treatment and control groups at baseline and by differential complication rates in groups receiving tonsillectomy or adenotonsillectomy. For example, 2 RCTs showed minimal effect at 1 year and no effect at 3 years of follow-up in preventing recurrent sore throat.[2,3] However, 1 of these could not be critically appraised because it was published in abstract format only.

Two other trials of tonsillectomy and adenotonsillectomy in children, both with and without tympanostomy tube placement, have shown a small, brief reduction in episodes of recurrent otitis.[4-6] In the largest study,[6] controls had a mean of 2.1 episodes of recurrent otitis media in the first postoperative year while those undergoing adenotonsillectomy had had 1.8 episodes (P = .25) and those undergoing adenoidectomy had 1.4 episodes (P < .001). However, these benefits did not persist beyond the first year.

Several case series report no evidence of effectiveness of tonsillectomy for immunoglobulin A (IgA) nephropathy, psoriasis, or nocturnal enuresis.

RECOMMENDATIONS FROM OTHERS

The Infectious Diseases Society of America states: "Surgical removal of the tonsils may be considered for the rare patient whose symptomatic episodes [of strep pharyngitis] do not diminish in frequency over time and for whom no alternative explanation for the recurrent pharyngitis is evident. Tonsillectomy may decrease recurrences of symptomatic pharyngitis in selected patients, but only for a limited period of time."[4]

The American Academy of Pediatrics position is as follows: "Tonsillectomy, either alone or with adenoidectomy, has not been found effective for treatment of otitis media with effusion."[5] The Scottish Intercollegiate Guidelines Network (SIGN): "The following are recommended as reasonable indications for consideration of tonsillectomy in both children and adults, based on the current level of knowledge, clinical observation in the field and the results of clinical audit." According to SIGN, patients should meet all these criteria: sore throats are caused by tonsillitis; 5 or more episodes of sore throat per year; symptoms have lasted for at least 1 year; and the episodes of sore throat "are disabling and prevent normal functioning."[7]

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