

Penicillin Treatment for Sore Throat: Longer Is Better

Zwart S, Sachs AP, Ruijs GJ, Gubbels JW, Hoes AW, de Melker RA. *Penicillin for acute sore throat: randomised double blind trial of seven days versus three days treatment or placebo in adults. BMJ 2000;320:150-4.*

Study Overview

Objectives. To determine if a 3-day course of penicillin given orally is as effective as a 7-day course in patients with acute sore throat.

Design. Randomized, double-blind, placebo-controlled trial. Analysis was by intention to treat.

Setting and participants. At 43 family practices in the Netherlands, 1147 patients aged 15 to 60 years were screened for study eligibility. Besides having had a sore throat for less than 7 days, participants had to have at least 3 of 4 Centor criteria: fever, absence of cough, swollen tender anterior cervical lymph nodes, and tonsillar exudate. Patients were excluded if they had received antibiotics in the previous 2 weeks, an intolerance to penicillin, suspected mononucleosis, history of glomerulonephritis, or an urgent need for antibiotics (quinsy). Of those who qualified, 203 patients were not randomized because of refusal to participate (168 patients) or doctors' reasons (35 patients). 561 remained for randomization.

Intervention. Patients were randomized into 3 treatment groups: penicillin V for 7 days, penicillin V for 3 days followed by placebo for 4 days, and placebo for 10 days. Patients in all groups were asked to keep a diary to record improvement or worsening symptoms and any potential side effects. Fourteen days after the beginning of the study, participants were reevaluated by their family physicians. Telephone follow-up at 2, 4, and 6 months was used to gather data on recurrent symptoms of upper respiratory tract infections and sore throats, and at 6 months subjects visited their physicians again. Cultures were obtained by a throat swab during the first visit and at 2 weeks. Drug compliance was also measured.

Main outcome measures. The primary outcome was time to symptom resolution. Other outcomes were bacterial eradication after 2 weeks and sore throat recurrences.

Main results. Baseline patient characteristics were similar in the 3 treatment groups. Subjects in the 7-day penicillin group achieved permanent symptom resolution in fewer days than those in both the 3-day penicillin and placebo

groups (1.9 and 1.7 fewer days, respectively). At 3 days, the 3-day penicillin group showed improvement similar to the 7-day penicillin group; however, 40% of the 3-day penicillin group had a recurrence later that week. Analgesic use was less frequent in the 7-day penicillin group, although there was no notable difference between groups until day 4. Between days 1 and 7, analgesics use in the 7-day penicillin group was reduced from 61% to 5%. Patients on the 7-day penicillin regimen also were able to resume normal daily activities earlier than those treated with 3 days of penicillin (2.2 days earlier) and those on placebo (2 days earlier). Penicillin therapy for 7 days was most effective in relieving symptoms in patients with group A streptococci.

Twenty members of the 7-day group had negative cultures for streptococcal infection, while the other groups reported 22 negative cultures each. The 7-day treatment was more effective than the 3-day treatment in eradicating group A and group G streptococci but not group C streptococci. All strains were susceptible to penicillin. Patients with negative throat cultures taking penicillin for 7 days also had an improved clinical response, but this was not statistically significant. The occurrence of side effects, mainly gastrointestinal symptoms, was higher in the groups treated with penicillin.

Conclusion

A 7-day treatment with penicillin is more effective than 3-day penicillin or placebo treatment for the resolution of sore throat symptoms in patients with group A streptococcal pharyngitis and, possibly, in those with non-group A streptococcal pharyngitis.

Commentary

Antibiotics are widely prescribed for sore throat, often out of fear that patients will develop complications of untreated group A streptococcal infections, rheumatic fever, or acute glomerulonephritis. Evidence suggesting that antibiotic treatment will reduce the incidence of rheumatic fever, otitis media, suppurative complications, quinsy, and sinusitis has been demonstrated, although whether these benefits apply to acute glomerulonephritis remains unclear [1]. It is also known that sore throats, if left untreated, will remit spontaneously. Further, as the incidence of rheumatic fever is very low, antibiotics should not be used for prevention in cases of

sore throat (especially in adults).

This study by Zwart et al was very well conducted and contained no major flaws. The patients and physicians were blind to the treatment; researchers even matched the taste of the placebo pills with that of the penicillin tablets. Follow-ups were complete and of adequate length. One can argue that treatment with placebo could have created an ethical problem. Fortunately, long-term complications were not different in the placebo-only group. Overall, these findings are interesting.

Applications for Clinical Practice

This study reports that a 7-day penicillin regimen is superior to a 3-day regimen and to placebo in the treatment of sore throat. Patients can expect to feel better and go back to work 2 days sooner on the 7-day course. But is this treatment as good as 10 days of antibiotics? The authors showed that the rate of bacterial eradication for the 7-day treatment was lower compared with the gold standard 10-day course (72% versus 90%). However, it is not clear if a higher rate of

eradication can better reduce the risk of suppurative disease. Studies using 10-day regimens examined microbiologic results but not complications [2,3]. Ideally, a study should be conducted to compare both approaches. The final decision, however, can probably be individualized for each patient. The applicability of this study should also be limited to the western hemisphere because the rate of complications (eg, in rheumatic fever) is much higher in developing countries.

References

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