

ORIGINAL ARTICLE

## Penicillin to Prevent Recurrent Leg Cellulitis

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### ABSTRACT

#### BACKGROUND

Cellulitis of the leg is a common bacterial infection of the skin and underlying tissue. We compared prophylactic low-dose penicillin with placebo for the prevention of recurrent cellulitis.

#### METHODS

We conducted a double-blind, randomized, controlled trial involving patients with two or more episodes of cellulitis of the leg who were recruited in 28 hospitals in the United Kingdom and Ireland. Randomization was performed according to a computer-generated code, and study medications (penicillin [250 mg twice a day] or placebo for 12 months) were dispensed by a central pharmacy. The primary outcome was the time to a first recurrence. Participants were followed for up to 3 years. Because the risk of recurrence was not constant over the 3-year period, the primary hypothesis was tested during prophylaxis only.

#### RESULTS

A total of 274 patients were recruited. Baseline characteristics were similar in the two groups. The median time to a first recurrence of cellulitis was 626 days in the penicillin group and 532 days in the placebo group. During the prophylaxis phase, 30 of 136 participants in the penicillin group (22%) had a recurrence, as compared with 51 of 138 participants in the placebo group (37%) (hazard ratio, 0.55; 95% confidence interval [CI], 0.35 to 0.86;  $P=0.01$ ), yielding a number needed to treat to prevent one recurrent cellulitis episode of 5 (95% CI, 4 to 9). During the no-intervention follow-up period, there was no difference between groups in the rate of a first recurrence (27% in both groups). Overall, participants in the penicillin group had fewer repeat episodes than those in the placebo group (119 vs. 164,  $P=0.02$  for trend). There was no significant between-group difference in the number of participants with adverse events (37 in the penicillin group and 48 in the placebo group,  $P=0.50$ ).

#### CONCLUSIONS

In patients with recurrent cellulitis of the leg, penicillin was effective in preventing subsequent attacks during prophylaxis, but the protective effect diminished progressively once drug therapy was stopped. (Funded by Action Medical Research; PATCH I Controlled-Trials.com number, ISRCTN34716921.)

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\*Members of the Prophylactic Antibiotics for the Treatment of Cellulitis at Home I (PATCH I) Trial Team are listed in the Supplementary Appendix, available at [NEJM.org](http://NEJM.org).

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