# PATCH II Trial

# RESULTS

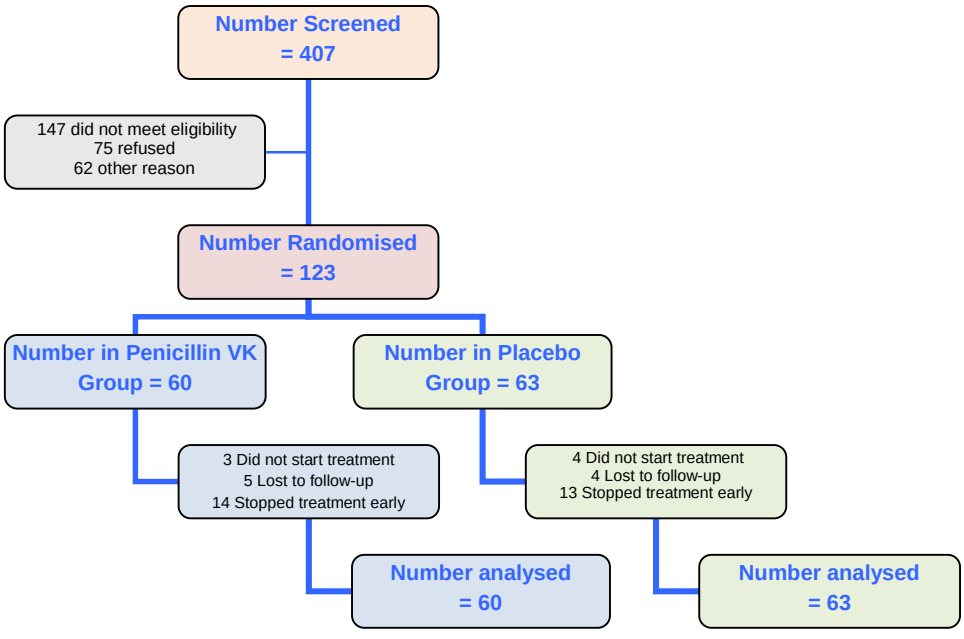
**Overall finding:** The results of the PATCH II study showed a lower rate of cellulitis recurrence in those participants taking low dose penicillin.

Cellulitis of the leg is a common, painful and serious bacterial infection of the skin. Around 2 to 3 % of all people admitted to hospital have cellulitis and may have to stay in hospital for around 9 days. Up to half of patients treated experienced repeat attacks, or other difficulties such as swelling of the leg and ulceration.

This study was designed to tell us if low dose penicillin, given after an attack of cellulitis, could prevent further attacks and complications, such as swelling and ulceration. It is the largest study completed, to date, to have investigated prevention of cellulitis of the leg. The study has taken place in 29 centres all over the UK (including Northern Ireland) and also in Cork (Eire). The study was funded by the Bupa Foundation (www.bupafoundation.com).

## What did the study involve?

Participants were placed in two groups at random, with an equal chance of being allocated to either group. Group A was given low dose penicillin tablets and Group B was given placebo tablets, to be taken twice a day for six months. The number of participants in each group can be seen in the flow chart below. Information was collected at a hospital visit at the start of the study and then by the PATCH study team by telephone (or by postal questionnaires), at 10 days after starting the study tablets, and then three and six months later. The six month call marked the end of the tablet taking part of the study for participants, who then went into the follow-up phase. Calls were then made less frequently, every six months, for up to two and a half years. Information on cellulitis and other health issues was collected at each contact. Neither the research team, nor the participants, knew who was in Group A or B, and thus PATCH II is described as a "blinded" study.



## Who took part in PATCH II?

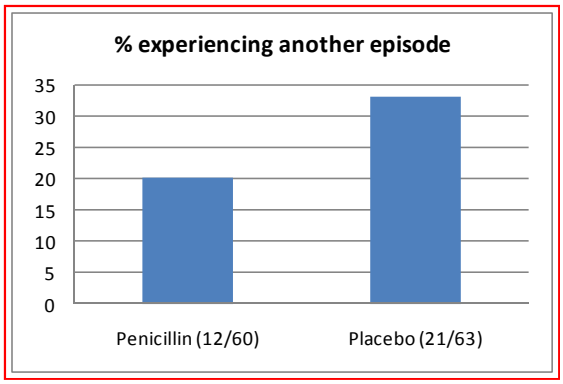
Patients who had had a bout of cellulitis of the leg within three months of joining the study were eligible for PATCH II. Participants began entering the study in July 2006 and it was hoped that we could complete recruitment in 12 to 24 months. Unfortunately, by August 2008 it became apparent that we would be unable to reach our target of 400 participants and so recruitment into the study stopped. The final number of participants entering the study was 123, 80 % of whom had just experienced their first episode of cellulitis whilst 20 % had had more than one bout. At 123 participants, this is still the largest study in cellulitis prevention that has been completed. PATCH I, a slightly larger study, is ongoing and will conclude in July 2011.

## Were the two groups similar to begin with?

Yes, the participants in the penicillin and placebo groups were very well matched. The two groups were similar in age, weight, sex (male : female ratio), and whether the participants were suffering from an ulcer or swelling of the legs when they entered the study. We also looked at the number of study tablets taken during the study. The number of tablets taken by participants was again very similar in both groups and the number of participants deciding they no longer wanted to take part in the study was similar too.

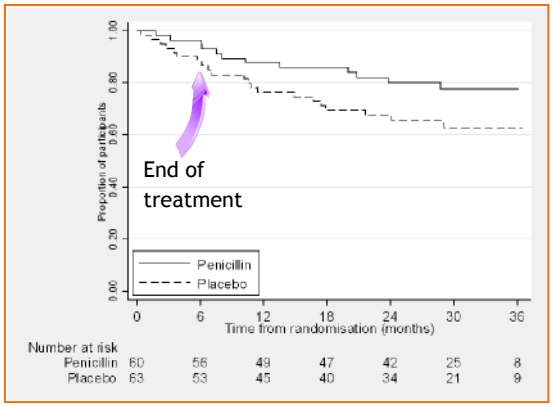
## What was the main result?

The main results indicate that 20 % of participants in the penicillin group experienced another episode of cellulitis of the leg during the study, that is 12 of the 60 people in that group. This is compared with 33 % of participants in the placebo control group who experienced another bout, that is 21 of the 63 people in that group. This is shown in the graph to the right, indicating the percentage of participants experiencing another episode during the three years they were involved in the study.




The analysis carried out indicates a 47 % reduction in the risk of further bouts of cellulitis of the leg for people taking penicillin, expressed statistically as a Hazard ratio (HR) = 0.53. It must be noted that this is not quite a statistically significant effect (p = 0.08) and so it could be due to chance. This means we cannot say with absolute certainty that taking a low dose of penicillin for six months after a bout of cellulitis of the leg will prevent further attacks. However, it does show a promising effect, even in people who have had just one bout of cellulitis of the leg.

The graph to the right indicates a relatively large gap between the two groups (lines) over the study period, i.e. there appears to be a sustained effect over the 36 months that participants were involved in the study, with the penicillin group (solid line) being consistently raised above the placebo group (dashed line). This indicates that even after the treatment had stopped there continued to be fewer cases of cellulitis in the penicillin group.



## What were the other results?

We looked at factors such as diabetes, lymphoedema and body weight, since these factors may result in patients being more prone to cellulitis. We wanted to see whether taking penicillin was more or less effective for people with one or more of these conditions. Overall, we found that none of these conditions made the penicillin more or less effective. We did note however, that there was some evidence to indicate that the presence of a nail infection (onychomycosis) may be linked with an increase in the risk of further bouts of cellulitis.

## What does it mean?

Even though this research suggests that taking a daily dose of penicillin for six months may help to prevent further episodes of cellulitis of the leg, it is not yet known for sure, as these results could have occurred by chance. However, with 123 participants, it is still the largest trial in cellulitis prevention carried out to date (the only two previous trials involved 36 and 40 participants respectively).

The Chief Investigator, Professor Hywel Williams has commented: "Although the results do not reach the conventional 5 % level of significance ($p = 0.05$), the probability that the large difference observed between the two groups is due to chance alone is just 8 % ($p = 0.08$)."

We are currently completing the follow-up of participants in the PATCH I trial, which involves giving the same dose of penicillin or placebo to participants who have had **more than one** bout of cellulitis of the leg, with the PATCH I participants having taken the study tablets for 12 months. This study will, hopefully, provide a more definitive answer to the question as to whether a low dose of penicillin will help prevent recurrence of cellulitis of the leg. When the results are available, later this year, we will let you know.

## What can I say to my doctor?

Do feel free to take this newsletter along to show your doctor and if you'd like another copy let us know. Currently there is very little evidence to indicate the best way to prevent recurrence of your cellulitis, so the PATCH II study, that you've been an important part of, is the best we have. Of course we are busy completing the PATCH I trial, as we have already mentioned, which should hopefully give us a more definitive answer.

## Thank you

**Thank you**

to everyone who took part in the PATCH II study.

We would like to take this opportunity to say thank you to everyone who has participated in this trial. Without the time you have given up and the enthusiasm you have provided, this study would not have been possible.

## Where will I find more information?

Please check the PATCH trial website (www.patchtrial.co.uk) for full details of publications and other relevant information. Please be aware that it may take several months before full details are available due to publication restrictions.

If you have any questions please feel free to contact us using the details below.

## Meet the team

This study was the idea and the passion of the late Professor Neil Cox, without whom this study would not have happened. Neil was a (consultant) dermatologist, based at the Cumberland Infirmary in Carlisle, and also the lead clinician for PATCH II.

The Chief Investigator for the study, that is the doctor who is responsible for the study and the overall safety of participants, is Professor Hywel Williams. Professor Williams specialises in research into skin conditions and is based at the Queens Medical Centre in Nottingham.

**Professor Neil Cox**

**Professor Hywel Williams**

## The Co-ordinating centre team

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our Clinical Trial Administrator who retired in July 2009.

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**www.patchtrial.co.uk**