

Prophylactic levofloxacin to prevent infections in newly diagnosed symptomatic myeloma: the TEAMM RCT

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Plain English summary

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Plain English summary

What is the problem?

Myeloma is a type of cancer that develops from cells in the bone marrow, called plasma cells, which are part of the immune system. Because myeloma affects the immune system, people who have it are at greater risk of picking up infections. This risk is higher at the start of antimyeloma therapy when the myeloma is active.

What did the study do?

The trial looked to see if the risk of getting an infection can be reduced, rather than waiting to see if an infection developed and then treating it. An antibiotic already used all over the world, called levofloxacin was tested. Half of the patients ($n = 489$) took levofloxacin for 12 weeks and the other half ($n = 488$) were given a dummy tablet (placebo). The aim was to see if taking levofloxacin at the start of antimyeloma therapy reduced the risk of getting an infection. Alongside this, we evaluated three important groups of antibiotic-resistant bacteria to see whether or not the use of preventative levofloxacin increased the number of these resistant bacteria living in the body.

In addition, the overall survival, economic impacts and the impact of using preventative antibiotics on patients' quality of life and response to antimyeloma treatment were evaluated.

What did the study find?

During the 12 weeks from new diagnosis of myeloma, the addition of prophylactic levofloxacin to active myeloma treatment significantly reduced the number of febrile episodes and deaths [134 (febrile episodes alone, $n = 112$; febrile episodes plus death, $n = 7$; deaths alone, $n = 15$) out of 488 (27%) placebo patients vs. 95 (febrile episodes alone, $n = 87$; febrile episodes plus death, $n = 4$; deaths alone, $n = 4$) out of 489 (19%) levofloxacin patients; $p = 0.002$] without increasing antibiotic-resistant bacteria.

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This report

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