

How body weight affects the way people with rheumatoid arthritis react to treatment with tocilizumab

Association between body weight and tocilizumab effectiveness in rheumatoid arthritis: results from the BSRBR-RA

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What was already known?

Tocilizumab is a type of treatment for rheumatoid arthritis (RA) which can be given to patients in two ways:

- 1) Injected into a vein (intravenous drip, also known as an 'IV').
- 2) Injected under the skin (subcutaneous injection, also known as 'SC').

Tocilizumab given via the IV route is dosed according to a person's weight, which means that the amount of drug that is injected is calculated based on the weight of the patient. However, when tocilizumab is given as an injection under the skin, it is not dosed according to the patient's weight, instead the same dose is given to everyone regardless of how much they weigh.

The aim of our research was to investigate whether body weight influences how well the treatment tocilizumab works in patients with RA, and whether how well tocilizumab works is changed based on how the drug is administered (IV or SC).

What was discovered?

We looked at 2612 patients with RA who were receiving tocilizumab. For the 1898 patients who were receiving IV tocilizumab (injected into the vein with the dose adjusted based on the patient's weight), patient body weight did not influence how likely tocilizumab improved RA disease control after six months. For the 714 patients who were receiving SC tocilizumab (injected into the skin and not dosed according to patient weight), those patients with a higher body weight at the start of treatment were less likely to experience improved RA disease control, although the differences were small.

Why is this important/what is the benefit to patients?

This research is important as it highlights that for those RA patients with a higher body weight, receiving SC tocilizumab (which is not dosed based on body weight) may be less beneficial in improving their arthritis symptoms compared with those receiving IV tocilizumab (which takes body weight into account). Reasons for this may be that increased fat mass can reduce how well SC treatment is absorbed. We propose that physicians should monitor the body weight of RA patients and promote the health benefits of maintaining a healthy weight.

Should you wish to read this scientific paper in full, the text can be found online here:

<https://doi.org/10.1093/rheumatology/keae500>

