

Cellular therapies offer hope in autoimmune disease



The ideal treatment for autoimmunity would be one that can induce self-tolerance before damage has occurred

INTRODUCTION

Autoimmune disease occurs when a person's immune system attacks itself, the body's own cells and tissues. There are many different types of autoimmune disease that can happen as a result – including rheumatoid arthritis or diabetes. At the moment, drugs that suppress the immune system are used to treat and manage autoimmunity, along with medicines that treat the symptoms of autoimmune disease, such as inflammation or hormone imbalance. However, because autoimmunity is a long-term problem, the best treatment would be one that can reset the immune system before damage occurs.

Cell therapy is a new branch of medicine that uses 'tolerogenic' immune cells to correct some of the immune abnormalities. The cells come either from the patient being treated (so-called autologous cells) or from another person (allogeneic). The cells are then processed in special laboratories and their numbers multiplied before being injected back into the patient.

HOW WAS THIS STUDY CONDUCTED?

This is a review article. This means that no special study was undertaken but the article was informed by a literature review. The authors summarised their understanding of the current situation with three types of cell therapies being developed for use in people with autoimmune disease. The cell types were: mesenchymal stromal cells, tolerogenic dendritic cells, and regulatory T cells.

WHAT WAS THE MAIN FINDING?

Each of the three types of cell therapy reviewed has advantages and disadvantages, and some will be more suitable in particular diseases than others. For example, mesenchymal stromal cells can regenerate tissue, which may be useful in conditions such as Crohn's disease or multiple sclerosis. From looking at a number of small trials in each cell type, the authors concluded that the results so far show that cellular therapies are safe and feasible, and worth exploring in more detail.

WHAT ARE THE LIMITATIONS?

Most of the studies outlined in this review are at the very earliest phases of clinical development. In addition, the studies the authors looked at were very small, and often did not include a control group to compare against. As with any new treatment it will be necessary to do more controlled clinical trials to confirm the benefit.

WHAT DO THE AUTHORS PLAN ON DOING WITH THIS INFORMATION?

The authors are performing their own studies looking at cell therapies. There are also lots of other research groups working in this field – not just in autoimmunity, but in other areas of medicines such as organ transplantation.

WHAT DOES THIS MEAN FOR ME?

If you have an autoimmune disease, these studies offer hope that in the future there may be treatments that provide long-term benefit from just one or a few treatments. However, the research is still in its infancy, and it will be a long time before any treatments based on cell therapies are widely available.

If you are interested in being involved in a clinical trial of cell therapies, you should speak to your doctor.

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