Liver tropism is key for B cell deletion immunotherapy

1 November 2013

Antibodies against the B cell surface protein CD20 have been used successfully to treat B cell-mediated autoimmune diseases and lymphomas. Antibody binding receptors, called Fc receptors, on other immune cells bind anti-CD20 on coated B cells, which induces B cell deletion through a mechanism that is not clearly understood.

In this issue of the *Journal of Clinical Investigation*, Philippe Bousse and colleagues at the Pasteur Institute in Paris described the fate of B cells in live mice after treatment with anti-CD20 antibodies. Bousse and his group found that B cells circulating through the liver were the first ones depleted after treatment and that B cells in circulation were more susceptible to deletion than those stationary in the spleen or lymph nodes. The researchers used intravital two-photon microscopy to follow B cells in the liver as they halted near specialized Fc receptor-bearing cells called Kupffer cells. The Kupffer cells bound and consumed the anti-CD20-coated B cells.

The study assigns a vital role to liver Kupffer cells in deleting B cells and describes techniques that may be used to improve the effectiveness of anti-CD20 therapy.

More information: The mechanism of anti-CD20–mediated B cell depletion revealed by intravital imaging, *J Clin Invest*. DOI: 10.1172/JCI70972

Provided by Journal of Clinical Investigation