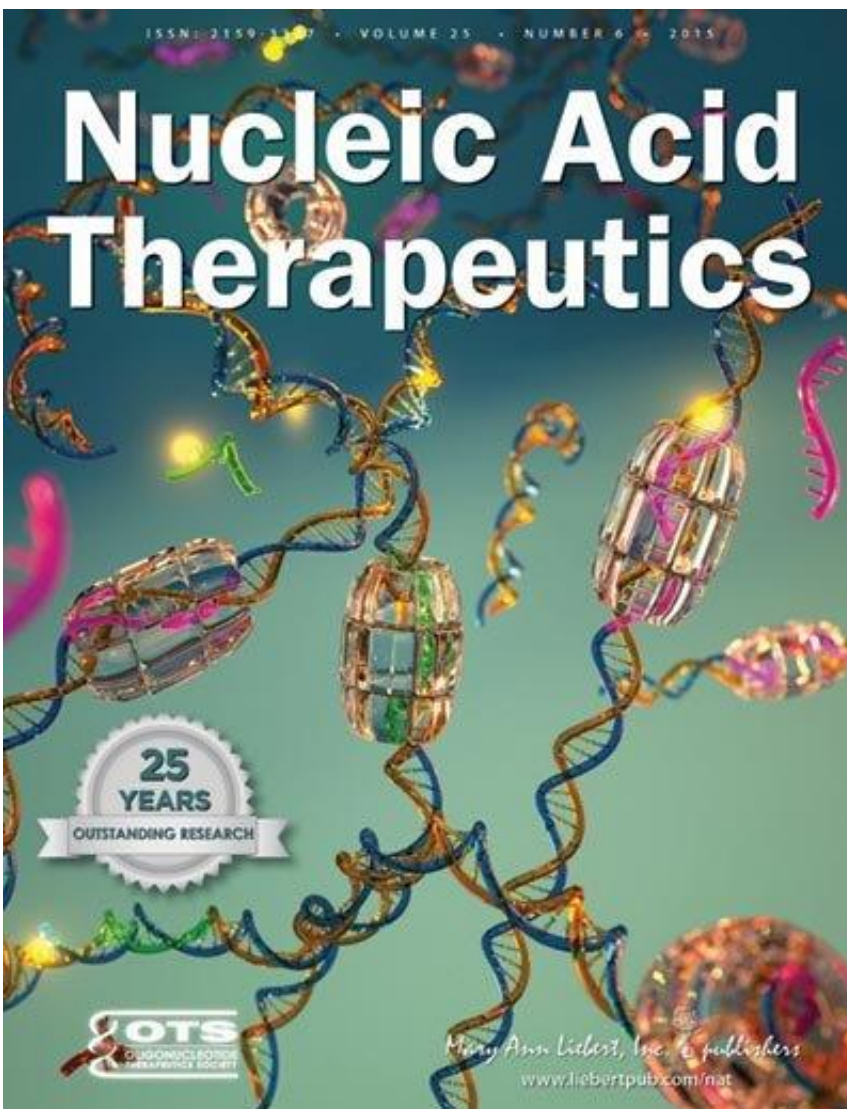


Are some people more likely to develop adverse reactions to nanoparticle-based medicines?

January 28 2016



Credit: Mary Ann Liebert, Inc., publishers

The complement system, the human body's first line of defense against blood-borne intruders, is blamed for infusion-related reactions to nanomedicines, but the conventional models used to predict the risk of cardiopulmonary side effects in response to nanopharmaceuticals might not well represent what actually occurs in humans, according to an article in *Nucleic Acid Therapeutics*.

S. Moein Moghimi, University of Copenhagen, Denmark, questions the validity of pig and sheep models to predict the risk of infusion-related reactions to nanoparticle-based medicines in humans. In the article ["Complement Propriety and Conspiracy in Nanomedicine: Perspective and a Hypothesis"](#), the author proposes that some individuals may be highly sensitive to nanoparticles due to a particular [liver](#) or [lung disorder](#) or a predisposition to liver or [lung](#) disease. Future studies should compare human lung tissue from patients with and without liver and inflammatory lung disease to explore the role of the complement system in nanopharmaceutical-related infusion reactions. In addition, a more realistic and predictive model for examining the risk of cardiopulmonary side effects associated with nanomedicines may be a rat with cirrhosis of the liver, suggests Dr. Moghimi.

"We are acutely aware of the need for carefully designed and conducted clinical trials to be properly informed by the best available evidence from in vitro and in vivo models. *Nucleic Acid Therapeutics* encourages and welcomes opinion pieces as exemplified by Dr. Moghimi's contribution that help facilitate safe translation to the clinic," says Executive Editor Graham C. Parker, PhD, The Carman and Ann Adams Department of Pediatrics, Wayne State University School of Medicine, Children's Hospital of Michigan, Detroit, MI.

More information: The article is available free for download on the

[*Nucleic Acid Therapeutics*](#) website until March 1, 2016.

Provided by Mary Ann Liebert, Inc

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