Not Enough Antibodies to Protect Against Superinfection

January 6, 2009

Most people's immune response to HIV isn't strong enough to protect them from being infected with a second strain of the virus, according to a study published in the December 2008 issue of the *Journal of Virology* and reported by ScienceDaily.

Scientists believe that up to 5 percent of people with HIV become infected with a second strain of the virus at some time point after their initial infection. This is called superinfection, as opposed to coinfection, which is when a person becomes infected with two strains at the same time. What has been poorly understood, however, are the factors that may put someone at greater risk of superinfection. Some scientists have suggested that it occurs predominantly in people with a weak antibody response to the first infectious strain.

To test this theory, Catherine Blish, MD, at the Fred Hutchinson Cancer Research Center in Seattle and her colleagues examined the immune responses of six women who became superinfected with a second strain of HIV between one and five years after their initial infection. These were compared to a second set of 18 women who had similar risk factors, but who remained infected with a single strain of HIV.

According to test tube research by Blish's group, the risk factor may be a matter of antibody quantity, not quality. The antibodies against HIV—dubbed broadly "neutralizing antibodies," or NAbs—found in both groups of women were considered to be potent enough against a second HIV infection. This led to the authors to conclude that many people living with HIV may not produce enough potent antibodies to ward off superinfection.

Blish and her colleagues warn that scientists working on a preventive HIV vaccine will have to be able to trigger an immune response that is more potent and plentiful than occurs naturally when a person is infected with HIV. They point out that this has been the case with vaccines for other viruses, such as those for hepatitis B and human papillomavirus.

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http://beta.docker.poz.com/article/hiv-superinfection-antibodies-15908-4876