Elderberries Trigger Cytokine Storm? David Christopher, M.H.

It was postulated that elderberries 'could' trigger a cytokine storm. Recently it spread through social media that elderberries 'would' trigger a cytokine storm. I do not believe that a scientifically trained person would ever substitute 'would' for 'could'; or that a vitalistic herbalist could even imagine that an herb would cause such disruption to a biological pathway.

First, let's understand what cytokines are. Cytokines are communication substances released by white blood cells. Cytokines include interleukins that propagate all immune cells and interferons which stimulate infected cells to produce proteins that interfere with viral replication.

To put people's fears to rest let's look at some actual studies.

First, Pubmed released a study in 2001 showing that an extract of elderberries could help prevent viral infections by stimulating the inflammatory process (cytokines) in healthy individuals. It certainly did not refer to an elderberry connection to a cytokine storm. (1)

Second, a 2016 study showed an anti-cytokine effect with the use of an elderberry-based formula used to treat atherosclerosis (inflammation of the arteries). (2)

From these two studies, we can see that herbs work differently in different scenarios. They can help the body's immune response or help the body's own immune suppression response.

It has always been taught, at the School of Natural Healing, that herbs support the body's physiologic pathways and do not control the body.

We can also learn from a third study that cytokine storms occur in patients with advanced stages of sepsis or acute respiratory distress syndrome, who are already deeply compromised, are being treated by healthcare professionals in ICU, and likely on lifesaving respiration equipment. (3)

It is possible that continued blocking of the body's inflammatory response could trigger a cytokine storm when presented by a new virus. This viral threat would override all blocks thus overloading the pathways, contributing to fluid buildup in the lungs. As far as herbs are concerned, there is no way an herb such as elderberry or echinacea could create a cytokine storm.

If the advice listed in my last two newsletters is adopted, you will never see a cytokine storm.

1. Barak V, Halperin T, and Kalickman I. The effect of Sambucol, a black Elderberry-based, natural product, on the production of human cytokines: I. inflammatory cytokins.*European Cytokine Network* 12, no. 2 (June 2001): 290-96. https://www.ncbi.nlm.gov/pubmed/11399518

2. Kirichenko TV, Sobenin IA, Nikolic D, Rizzo M, and Orekhov AN. Anti-cytokine therapy for prevention of atherosclerosis. *Phytomedicine: International Journal of Phytotherapy*

and Phytopharmacology 23, no. 11 (October 15, 2016): 1198-1210. https://doi.org/10.1016/j.phymed.2015.12.002

3. Tisoncik JR, Korth MJ, Simmons CP, Farrar J, Marting TR, & Katze MG. Into the eye of the cytokine storm. *Microbiol Mol Biol Rev.* 2012 Mar 76(1): 16-32. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3294426

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