

How Aviptadil Saves Lives

In the lining of the lungs, there are 2 types of alveolar cells, known as type 1 and type 2. The type 1 cells are much more prevalent, but the type 2 cells are critical to the function of the lungs.

When air is breathed into the lungs, the way our body moves the oxygen from the breathed air to the blood system is through the use of a liquid known as surfactant. Without surfactant, we would never receive oxygen into our bodies. Surfactant coats all the alveolar cells (type 1 and type 2) inside the lungs, but only alveolar type 2 cells produce surfactant. A steady and constant supply of surfactant is required for the continued exchange of oxygen from air to the bloodstream. While the type 2 cells are outnumbered by type 1 alveolar cells, their role is undeniably important.

As we have all learned by now, the unique “spikes” on the novel coronavirus that causes Covid-19 are shaped to fit perfectly onto the alveolar type 2 cells in the lungs. Once the virus attaches to these type 2 cells and infiltrates the cells, it begins to replicate its own viral cells and it kills the type 2 alveolar cells. When there is a reduction in type 2 alveolar cells, the body does not produce the surfactant which is used to get oxygen into the bloodstream.

As a result of diminished surfactant in the lungs, the patient loses the ability to convert breathed air into oxygen in the bloodstream. There are many known cases of patients who do not report any difficulty with actually breathing, but their blood oxygenation levels drop dramatically. It is because their lungs are still functioning to bring in the air, but the lack of surfactant means they are not converting the oxygen from the air into the bloodstream. A lack of oxygen in the body then begins a cascade of other problems.

Aviptadil is a synthetic, or man-made, version of a peptide that naturally occurs in our bodies. This peptide, known as Vasoactive Intestinal Peptide (VIP), also attaches to type 2 alveolar cells in the lungs, thereby, limiting the availability of a host for the coronavirus. With no host cells for the virus to use to replicate itself, the body’s immune system can more easily eradicate the virus. The type 2 cells can continue to perform their important function of creating surfactant and our bodies remain well-oxygenated.

This is just one of the ways Aviptadil saves lives.