**There Is More to Chlamydia Than Just STIs**

 “In the United States, chlamydia is associated with sexually transmitted infections (STIs), but that is not the only thing that chlamydia causes,” said Dr. Lutter. While Dr. Lutter mentioned that chlamydia is considered to be the most common sexually transmitted bacterial disease, she also stated that ocular trachoma, from chlamydia, is the leading cause of blindness worldwide. In the world, there are approximately 9 billion people who permanently go blind due to this disease.

She discussed how chlamydia infects the conjunctiva, and ultimately causes the eyelashes to turn inwards toward the eyeball. This leads to the scraping of the cornea, which is what causes the blindness to ensue. “Chlamydia can also cause pneumonia,” said Dr. Lutter. She also mentioned that 75% of people have actually been exposed to chlamydia pneumonia.

Dr. Lutter stated, “I started studying chlamydia because it was more complicated than what most people know about.” She said that chlamydia could be treated with a Z-Pak, and the patient can be sent on their way. What is interesting though, is that 6 billion dollars is spent each year on the treatment of chlamydia, but the affects of the disease are detrimental and can be long lasting.

She mentioned that the Bill Gates Foundation is investing in the treatment of chlamydia. Chlamydia can ultimately lead to infertility and ectopic pregnancy. She also talked about something that I found extremely interesting: even after getting chlamydia once, the person can get it over and over again. This is because there is no immunity after getting the disease the first time. This is what ultimately makes this disease so much more complicated, and leads to the topic of extrusions.

In her paper, Comparison of Murine Cervicovaginal Infection by Chlamydial Strains: Identification of Extrusions Shed *In* vivo, she discusses that chlamydia is able to leave the cell by two methods: by lysis or extrusion (Shaw, Behar, Snider, Allen, & Lutter, 2017). While lysis, or the bursting of the cell, is understood, Dr. Lutter and her team wanted to do more research on extrusions. “Extrusions are different than just bursting through the cell, they actually pinch off from the cell and can even hide from the immune system,” Dr. Lutter explained. Dr. Lutter described that the immune system cannot recognize these chlamydia filled cells because they look just like a normal cell. She further explained how chlamydia also has many different serotypes and does not confirm immunity, making it very hard to develop a vaccine for the disease.

In Dr. Lutter’s research, she asked the question, “Are extrusions real?” This was the start of identifying the shed of extrusions *in vivo*. Dr. Lutter and her team used mouse models in order to determine the answer to her question. As a side note, she assured me that the mice were treated in a very humane manner and with the upmost care. The mice were infected with multiple strains of chlamydia and monitored to see if the extrusions were shed (Shaw et al., 2017). This research was very important because it was the very first finding of extrusions shed *in vivo*.

Dr. Lutter explained that this finding can be used to purify extrusions and can also lead to the discovery of extrusions in humans, which can further develop the treatment of chlamydia and the possibility of developing a vaccine.

**References**

Shaw, J. H., Behar, A. R., Snider, T. A., Allen, N. A., & Lutter, E. I. (2017). Comparison of Murine Cervicovaginal Infection by Chlamydial Strains: Identification of Extrusions Shed In vivo. *Frontiers in cellular and infection microbiology*, *7*, 18.