Lymphoma triggers Aspergillus bacteria in people

Authors: Melissa Anderson Melissa Gonzalez Terri Cooper Tammy Moran Erika Alvarez

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University of Central Arkansas

School of Global Science, Technology, and Society

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In their four-year study, â€œTumor Immunology and Aspergillus Infection: a longitudinal study,â€ Tung, Lim, and their colleagues examined how germs such as Aspergillus may interfere with an immune systemâ€™s development. They focused on this possibility after studying a large number of mice with individual pathology that changed little over time. The scientists then assessed tumor growth and inactivity in large numbers of young adult humans.

The investigators studied causes of tumors. Mice that were genetically altered to produce tumors, as well as normal mice whose tumors were absent, were normal genetically until they acquired Aspergillus. Then the mice showed higher tumor growth rates after 6 months. Larger mice with more Aspergillus also developed larger tumors.

After 12 months, several other minor changes were seen in normal mice, as well as mice that had received Aspergillus. When they stopped for a brief period, these mice were more suitable for lymphoma treatment than those that had not been exposed to Aspergillus.

These animals later underwent lymphoma surgery. During the course of the operation, tumor growth rates, disease rate, and survival rates of the mice whose tumors developed after exposure to Aspergillus were maintained even after the animals stopped receiving treatment. According to the investigators, the animals had not received sufficient exposure to Aspergillus to cause clinical symptoms.

The samples from the humans also were analyzed, and the scientists found that treating the people with Aspergillus became irrelevant as their cancer progression continued. These findings suggest that the changes in tumor cells that are observed in Aspergillus-exposed mice is not dependent on that presence of the Aspergillus.

These findings suggest that normal cells cannot harbor bacteria and that changes in tumor cell development may affect the immune system. Such changes may be mediated by bacteria. The role of bacteria in human cancer progression may be related to individualsâ€™ susceptibility or sensitivity to disease-fighting effects of bacteria, thereby enabling their cancers to remain a â€œhidden enemyâ€ in the human body for many years.

A Fire Hydrant In The Middle Of A Forest