

Nova Scotia: Testing herbal remedies for cancer

For centuries, medicinal herbs have been used to treat a wide variety of ailments, from skin rashes to fever and more serious diseases. After falling out of favour in the age of modern medicine, herbal remedies have been making a comeback in recent years as people look for more natural ways of treating their illnesses.

Eighteen-year-old Eleizer Marval and Mohaned Khairy, 17, Grade 12 classmates at Citadel High School in Halifax, decided to investigate whether two of the more well-known herbal remedies – Echinacea and piperine (the active piquant chemical in black pepper) – might have a beneficial impact in treating cancer. Echinacea is popularly believed to stimulate the body's non-specific immune system while piperine has been found to interact with enzymes and proteins to multiply the strength of other supplements.

Under the guidance of their mentor, Dr. Kenneth West, of the Microbiology and Immunology Department at Dalhousie University, they devised a series of in-vitro laboratory experiments to test the effects of Echinacea and piperine on cancerous cell lines – specifically three common types of lymphoma.

First, they tested whether cell proliferation was enhanced or inhibited by either herbal remedy. Then they compared the size and shape of “healthy” cancer cells with the same cells after exposure to the herbal agents. Both tests found Echinacea and piperine had no negative effects on the cancerous cells.

The third test explored whether the herbal treatments affected the binding of cancerous cells to the endothelium, the thin layer of cells that line the interior surface of blood vessels. The young researchers noticed both agents, but particularly Echinacea, increased the ability of the cancer cells to adhere to endothelial cells, suggesting an increased possibility of migration to peripheral organs and connective tissue and eventual metastasis throughout the body.

“These are only in-vitro models and there is not enough evidence to say whether these compounds could be detrimental,” said Eleizer Marval. “It is certainly an area where further research is warranted.”

As for the possible use of Echinacea and piperine in cancer treatment, the team from Citadel High School concluded that whatever other benefits might accrue from taking these herbal remedies, they had no impact on the rate of proliferation or the nature of cancerous cells.