Lycée Privé Jeanne d’Arc School Year: 2014-2015

Teacher: Mr. RAMDE Level: Tle D

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**Text: CANCER RESEARCH ’S NEW *TACK***

Recruiting volunteers to test an experimental cancer treatment at Stanford University in 1993, Ronald Levy interviewed four lymphoma patients who turned out to be too sick to qualify for the study. Wanting to offer them something, Dr Levy suggested a never-tried treatment called a dendritic-cell vaccine.

The body’s then-mysterious dendritic cells -master controllers of immunity discovered by Rockefeller University’s Ralph Sterinman – were only beginning to be understood by doctors as disease fighters. They are the “generals of the immune system army”, says Jacques Banchereau, director of the Baylor Institute for Immunology Research in Dallas. Shaped like *spiny-starfish*, they move about the body hunting for pathogens that cause disease; when they find something, they carry it to a *lymph node*, where they recruit and train T-cells to recognise and fight the disease. Doctors’ practical ability to *harness* these cells in the laboratory as a cancer vaccine was only theoretical when Dr Levy suggested the treatment. But the cancer patients were very sick, and gave him the green light.

Ten years later, the four are still alive, as are an additional 31 cancer patients who joined them in the Stanford experiment. And Dr Levy’s last attempt gesture has led to a seismic shift in cancer research. At least 10 academic and commercial teams are now testing dendritic-cell vaccines to treat everything from melanoma to prostate cancer.

In a sign of the field’s burgeoning activity, just 200 people attended the first international dendritic-cell conference a decade ago in France, where the Stanford team presented its first results; this year’s conference swelled to about 1,300 attendees. The National Cancer Institute says it has issued 107 grants for dendritic-cell research, including vaccines, and clinical trials.

Dendritic-cell vaccines vary, but most are custom-made by drawing the cells from the patient’s own blood and fusing them with pieces of the patient’s tumour. As a killer of cancer cells, these vaccines are a sharp departure from standard chemotherapy. In individual patients, cancer cells can develop ways to survive the toxic chemicals used in chemotherapy and become a much more difficult-to-treat form. Harnessing the immune system to fight cancer in the same way it fights microbes might provide a more powerful and versatile weapon against cancer, especially when drugs fail. And a vaccine is expected to produce fewer, less severe side effects.

“Immunotherapy may be one of the only ways left to deal with cancer. We’ve gone as far as we can with chemotherapy. There are new drugs coming out. It’s sort of a dead area”, says oncologist Herman Kattlove, an editor for the American Cancer Society.

**M.Chase C.R.Zimmerman, The Wall Street Journal Europe, Brussels,**

**Belgium, May 23-25, 2003, (p.44).**

***NOTES:***

*Tack:* direction

*Spiny-starfish:* sea animal covered with long sharp points

*Lymph node: noeud* lymphatique

*To harness:* to control in order to use, to exploit.

***GUIDED COMMENTARY:***

1. What has led Dr Ronald Levy to suggest a new treatment against cancer?

2. What is the role of dendritic-cells in the human body?

3. Was Dr Ronald levy’s treatment successful according to the text?

4. How are dendritic-cell vaccines produced?

5. Do you think Immunotherapy has a future in the treatment of is it just a provisional solution?