What is Cancer Vaccine? Does it prevent Cancer?

Published on December 27, 2020

Dattatreya M. | [Follow](#)
MBBS student|Oncology |AA...

2

0

0

Dattatreya Mukherjee, MBBS Student, Jinan University, P.R China

Cancer vaccine is a very common term for many people after FDA approved the Triple Negative Breast Cancer based vaccine of Cleveland Clinic, USA. So what is a Cancer Vaccine and do it prevent cancer. Lets discuss these in this article.

First Cancer Vaccine is not a preventive vaccine, its a therapeutic vaccine. What does it means? It means it will increase the immunity against the tumor cells i.e its a part of immuno-targeted therapy. Now how does it works?

Basic mechanism is the process to increase the amount of T cells against Tumor Associated Antigen (TAA). Mostly DNA/RNA/DC/CART are used to activate MHC I and II and thus increase CD4 helper and CD8 cytotoxic T cells Or use some modified peptide or virus (Oncolytic Vaccine) to get the same mechanism.

TAA and Tumor associated neo antigens are present in the body. They usually reduce the immune factors. Now we are giving immuno-stimulant as a vaccine. Immuno-stimulant can be a DNA, RNA, Peptide or DCs. They are send by a modified bacterial host or an artificial hosts with an adjuvant like TLR3, TLR6, IL.

Now, new mechanism is CART therapy, here CAR T is used to Increasing T cells against TAA. Which is used in this breast cancer one.

DC are formed from CD 34+, they are one of the old technique in cancer vaccine and successfully done against melanoma. DNA is sent with Plasmid, DNA is converted to RNA and Protein, thus the amount of DNA should be high to get a good effect. Oncolytic vaccines are good in cervical carcinoma. Low dose Chemotherapy also increase the immunity.

So in conclusion, Cancer vaccine is not a preventive vaccine, it is a therapeutic vaccine comes under immuno-targeted therapy. Personalized Onco vaccine is in process. Efficacy is now great after using electroporation.

Hope I have able to address these two questions very simply. The mechanisms are much more complicated but the basics are two:

1. Activate the MHC molecule and Produce more CD4 and CD8 T lymphocytes against TAA.
2. Its a therapeutic vaccine not a preventive vaccine like COVID 19 Vaccine.

Acknowledgement: I want to thank my oncology research supervised Dr. Kalyan K Mukherjee for teaching me oncology vaccines in details. I also want to thank ESMO, from the books of ESMO, I have read about Oncology Vaccines in detail.

Apologize: I am a MBBS student. I am also learning about this. So if I could make any minor mistakes in this article I am apologizing for that. Please give your feedback and correction regarding this.

Author's Bio: Dattatreya Mukherjee is a MBBS student in Jinan University, P.R China. He is also research assistant in Jinan University. He is doing different researches in the medical field and could published 35 scholarly articles. Research interests are oncology and hemato-oncology.

Published By

Dattatreya M.
MBBS student|Oncology |AAMC ID...

[Follow](#)

I have made an small article on cancer vaccine (2 mins read). I have addressed two things. One what is a cancer vaccine? Second is it a therapeutic vaccine or a preventive vaccine? Because in our society people thinks vaccine means MMR, TT, Polio. Is Cancer Vaccine is different from these vaccines? [#cancer](#) [#medicine](#) [#research](#) [#health](#) [#diabetes](#) [#healthcare](#) [#breastcancer](#) [#cancerresearch](#) [#oncology](#) [#science](#) [#breastcancer](#) [#cancerresearch](#) [#diabetes](#) [#oncology](#) [#research](#) [#healthcare](#) [#health](#) [#society](#) [#cannabis](#) [#people](#) [#society](#) [#people](#)

0 comments

[Sign in](#) to leave your comment

[Join now](#)

[Sign in](#)