



# Interview with Prof. Hope S. Rugo: updates in the management of HER2 positive advanced breast cancer

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## Expert's introduction

Prof. Hope S. Rugo, Clinical Professor, Department of Medicine (Hematology/Oncology); and Director, Breast Oncology Clinical Trials Program, University of California San Francisco Comprehensive Cancer Center, USA.

Dr. Hope Rugo (*Figure 1*) is a medical oncologist and hematologist specializing in breast cancer research and treatment. A Clinical Professor of Medicine, Dr. Rugo joined the Breast Care Center in 1999 after a decade of experience at University of California, San Francisco (UCSF) in malignant hematology and bone marrow transplantation for a variety of diseases, including breast cancer. She entered the field of breast cancer in order to incorporate novel therapies based on an understanding of the biology of cancer with excellent quality of care into the treatment of women with breast cancer.

For more details, please check the following interview video (*Figure 2*).

## Interview

In the interview (*Figure 3*), Professor Hope S. Rugo first shared with us the main content of her speech at the conference: Updates in the Management of HER2 Positive Advanced Breast Cancer (*Figure 4*). HER2 positive breast cancer is a highly prevalent type of breast cancer subtype, and about 20–25% of breast cancers are HER2 positive cancer. Compared with other types of breast cancer, HER2-positive breast cancer progresses faster, has a higher degree of malignancy, and is more prone to recurrence and metastasis. Prof. Rugo said that the treatment of metastatic HER2 positive breast cancer is her research focus.

The CLEOPTRA study showed that adding pertuzumab to trastuzumab with docetaxel in the first-line treatment significantly increased the progression-free survival of patients by 6.3 months. What was most striking was the patient's overall survival has been extended to 15.7 months. Prof. Rugo said that the CLEOPTRA study found that

this doublet antibody therapy and maybe HER2 targeted therapy overall change the microenvironment of breast cancer subsequent response to therapy so that the patients are living much longer.

The Emillia study showed that although T-DM1 drugs may cause some side effects such as diarrhea and thrombocytopenia, it significantly improves the patient's survival. T-DM1 has thus become the standard second-line treatment for HER2-positive breast cancer. In the third-line treatment, T-DM1 is superior to doctor-selective therapy (TPC). The TH3RESA study showed that TDM1 monotherapy extended the overall survival by 7.1 months. Prof. Rugo said that these strategies of treating in sequence are really important where you want to the drugs that have shown the biggest impact on patients' overall survival.

In recent years, immunotherapy has been very hot and attracting our attention. Prof. Rugo said that some studies on combined immunotherapy in HER2-positive advanced breast cancer are worth exploring. Preclinical studies have found that a single dose of preoperative trastuzumab can change the immune profile within a tumor. It is, therefore, possible to combine anti-HER2 therapy with immune checkpoint inhibitors to further improve the survival of patients with HER2-positive advanced breast cancer.

Prof. Rugo believes that treating breast cancer patients needs to be based more wisely on the biology of patients' disease. In recent years, some studies have shown that breast cancer is a complex systemic disease with multiple gene mutations. Many gene mutations have been found in breast tumors, which are significantly associated with poor prognosis. Biological indicators related to cancer prognosis are important for future breast cancer treatment. At the same time, Prof. Rugo emphasized that it is necessary to choose the appropriate treatment plan according to the needs of patients. Prof. Rugo also mentioned that we need to strengthen international cooperation to the research and development of biosimilars that so that patients in all countries can afford these "life-saving drugs".



**Figure 1** Prof. Hope S. Rugo.



**Figure 2** Interview with Prof. Hope S. Rugo: updates in the management of HER2 positive advanced breast cancer (1).

Available online: <http://www.asvide.com/article/view/32115>

Regarding how to prevent breast cancer, Prof. Rugo mentioned that although breast cancer prevention is not her research area, she is very interested in it. In her view, regular breast examinations are essential. Once diagnosed with breast cancer, patients should respond promptly. Genetic testing is also important to prevent breast cancer. Women with German Jewish ancestry or family history of breast cancer and ovarian cancer are more likely to carry susceptibility genes of breast cancer, so these high-risk groups of breast cancer need to do breast screening



**Figure 3** Photo with Prof. Hope S. Rugo.



**Figure 4** Prof. Hope S. Rugo

earlier, frequently, and carefully. In addition, healthy eating habits and proper exercise also can help us prevent breast cancer.

When asked how to balance her time and energy as a clinical professor and two kids' mother, Prof. Rugo revealed that one of her secrets was to have a very understanding and supportive partner. She thinks a supportive partner is a critical aspect of being able to have a successful career and raise her children. Another secret is to have a passion for what she does in all aspects of her life that drives her ability to do all of these tasks at least as well as she can.

#### *Interview questions*

- I. You gave a presentation on the topic "HER2 Positive Breast Cancer". Could you share the highlight of your topic with our readers?
- II. Could you please share with us your opinions toward the treatment of breast cancer in the coming years?
- III. Would you like to share with us some suggestions to effectively prevent breast cancer?

IV. As a clinical professor and two kids' mother, how do you balance the time between work and family?

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*Ethical Statement:* The author is accountable for all aspects of the work in ensuring that questions related

to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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## References

1. Gao L. Interview with Prof. Hope S. Rugo: updates in the management of HER2 positive advanced breast cancer. *Asvide* 2019;6:153. Available online: <http://www.asvide.com/article/view/32115>

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