Dr. Lucio Crinò: our greatest challenge is finding the right treatment for the right patients

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Editor's note

The 18th World Conference on Lung Cancer (WCLC) organized by the International Association for the Study of Lung Cancer (IASLC) was held in Yokohama, Japan from 14–18 October, 2017. As the world's largest multidisciplinary oncology conference on lung cancer, it gathered more than 7,000 key opinion leaders, professionals and researchers from over 100 countries, who came together to unfold a series of in-depth academic exchanges and collaborations. In the meantime, AME seized the opportunity to conduct interviews with a number of experts.

Expert introduction

Dr. Lucio Crinò (*Figure 1*), MD, is Director of Medical Oncology Division, Department of Oncology at the University Hospital of Perugia, Italy. Prior to his current position, Dr. Crinò was Director of Medical Oncology in the Department of Oncology at Bellaria-Maggiore Hospital in Bologna, Italy. He spent 2 years as visiting scientist at the National Cancer Institute in Bethesda, Maryland, USA.

Dr. Crinò's research interests include experimental studies on basic and clinical applied research on lung cancer, including translational research. He is the study coordinator of several European and international clinical trials on lung cancer chemotherapy and has been a key investigator in several Italian studies investigating the role of chemotherapy in advanced disease in non-small cell lung cancer (NSCLC).

Dr. Crinò is a reviewer for scientific journals such as *Lung Cancer*, *British Journal of Cancer*, *Journal of Clinical Oncology*, *Annals of Oncology* and *Cancer*. He is the author or co-author of more than 150 publications in peer-reviewed journals.

We are honored to have invited Dr. Crinò to an interview, where he shared with us the development and improvement of NSCLC treatment over the years, the challenges in dealing with advanced stage cancer patients, and the need for young physicians to engage in translational research in the field of oncology.

Figure 1 Dr. Lucio Crinò at WCLC 2017.

TLCR: In your study, you mentioned circulating microRNAs could be useful biomarkers. What is their significance?

Dr. Crinò: We did a trial in recent years where we looked in a setting with population of fully-resected patients, and tried to find out if there is potential correlation. We did an expression in the blood with microRNA. This trial was done when I was in the University of Perugia, but we have done so in a similar population of fully-resected NSCLC. The patients were all in stages 1 and 3, fully resected in NSCLC, in which the blood serum was collected before and at the time of surgical resection. We waited for the microRNA expression in the patients to correlate with the clinical outcome. In particular, we did the correlation with the recurrence of the tumor, so we did a progression-free relapse time. We understand that there are some microRNAs that may be prognostic factors for recurrence

tumors and this is what we are doing to implement it in the future. We are trying to see if we can use microRNA as biomarkers to predict which kind of patients have the greatest possibility of recurrence after a full resection.

TLCR: During the treatment of NSCLC patients, what challenges have you been meeting so far? And how do you cope with them?

Dr. Crinò: Speaking about the treatment of locally advanced disease during my experience in the last year, I believe the biggest challenge is to understand which kind of patients can be treated with which kinds of treatment with some degree of success. One of the problems in medical oncology is to treat patients knowing that we can benefit only a small percentage of patients. I believe that the most important question in clinical practice is to select the right patients for the right treatment. Up till the last century, we were in the position to treat everyone with the same treatment—platinum-based chemotherapy. It took us a very long time to arrive at this conclusion: that platinum-based chemotherapy is a good treatment method for everyone. We understood, however, at the start of this century, that adenocarcinoma is a completely different story. We initially treated squamous and non-squamous cell carcinoma with the same regiment. But now we know that adenocarcinoma can be a completely different disease and is very complex, and we can recognize more than ten diseases on the basis of molecular intrinsic alteration. Molecular intrinsic alteration is not only the key to understanding why the disease is of a completely different nature, but is also the basis for developing very important and personalized clinical treatment that can modify the natural history and prognosis of the patient. So, right now, the most important question to me is to better identify the profile of every patient in order to provide appropriate treatment. This is also true for the last generation of drugs we have in immunotherapy; we know that the long-term benefit in tumor survival is not for all patients. We have to understand which patients will see the greatest efficacy when treated with immunotherapy.

TLCR: What role does immunotherapy play in NSCLC?

Dr. Crinò: Immunotherapy has been a relevant modification to treat NSCLC. When I was in Bethesda in 1974, I was in the lab of immunochemotherapy, because at that time we were trying to find some form of immuno-treatment of cancer, and for many years, we have tried many different ways, for example, BCG, to stimulate the immune system, hoping it could work also for cancer. Today we understand why cancer is able to defend itself from the immune system. We are looking at the inhibitors and the developing drugs acting on different receptors in the T cells and cancer cells, and finding out how to develop a good immune response that will benefit most of our patients. We know that PD-1 and PDL-1 is the immune checkpoint that we have been able to target more successfully. We are also trying to find out which biomarker is the best one to identify candidates that would have a good response to immune checkpoint inhibitors. We now know that tumor burden and tumor neo-antigens could be important, and today, we can even show how we can evaluate antigenic tumor burden in the blood by looking at and evaluating the tumor DNA, the number of mutations that are present, and we can establish treatment or evaluate results of the treatment based on the tumor burden in the peripheral blood. This could be a revolutionary way to predict the patient's response to immunotherapy.

TLCR: As a clinician, you constantly face advanced cancer patients. Their living quality is low, and they understand that they are at the end of their lives. What would you say is the most difficult thing about communicating with these patients?

Dr. Crinò: We have come a long way, because we started at a time where in different countries, there were different attitudes in communicating with the patients and their families. This was at the beginning of my career. With the development of treatment and improvement of results over the years, our duty becomes more important, because we have to communicate to the patients everything about the disease, the possibility and side effects of the treatment, and we have to spend a lot of time with them to help them along the different treatments we have at our disposal. Very often, the patients' families do not have an accurate perception of the treatment and how difficult this disease can be. Most believe that they are part of the small number of people in the population that can garner the best results from treatment. Everyone believes that they may potentially attain cure for such a challenging disease like lung cancer, which remains to this day the number one cause of cancer-related death, the number greater than breast, colorectal, and prostate cancer combined. It is difficult to explain this prognosis to the patients while keeping their hopes high about having good results with the treatment we have to

Figure 2 Dr. Lucio Crinò: our greatest challenge is finding the right treatment for the right patients (1).
Available online: http://asvidett.amegroups.com/article/view/22845

offer. I would say that's the most challenging bit: to balance out hope and reality.

TLCR: What would be your advice to young physicians?

Dr. Crinò: I believe that we have an important role in working with young physicians. One of my most important duties is to share my experience with them, and to advise them to engage in clinical research, because I believe that translational research is something that we need to implement in our clinical practice. For young physicians that are starting out on their path in oncology, we have to find out how we can make them keep up their interest in clinical practice, as well as how to translate basic research that we do every day into clinical practice. Our goal, I think, is to create a new generation of oncologists who understand the potential of translational research, and I believe that would be one of the main objectives people like me can try to attain when reaching out to young physicians.

For the original content, please view the interview video (*Figure 2*).

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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1. Li B, Poon B. Dr. Lucio Crinò: our greatest challenge is finding the right treatment for the right patients. Asvide 2018;5:075. Available online: http://asvidett.amegroups.com/article/view/22845

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