Chairperson's Introduction

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Introduction

The classical approach to cancer therapy has been to treat according to the organ or tissue of origin. This approach was reasonable at a time when we had no clue about the molecular basis of cancer and the different signalling pathways that are perturbed in the various cancer types. Dissection of the genetic events that led to cancer over the last two to three decades has taught us that cancer results from a number of genetic defects and such defects are often dissimilar in individuals suffering from the same type of cancer. While this explains the heterogeneous response to anti cancer agents of patients suffering from apparently similar cancers, it at the same time provides a huge obstacle for the effective treatment of cancer. In the last decade, treatment of cancer has slowly but steadily begun shifting from a 'one size fits all' approach to a more personalised approach, in which each tumor is treated according to the specific defects present in that tumour. Obviously, such an approach requires the availability of biomarkers that help physicians to decide which therapy to give to which patient (the question 'how to treat'). Biomarkers that foretell drug responses are referred to as 'predictive biomarkers'. Similarly, not all primary tumours behave equally aggressively. For some cancers (e.g. breast cancer) surgical resection of the primary tumour may in some cases be curative without further adjuvant therapy, while for other primary breast cancers, aggressive chemotherapy may be indicated. Discrimination between more and less aggressive forms of the same cancer type again calls for biomarkers that help address prognosis: the question 'who to treat'. Biomarkers that foretell future recurrences of cancer are called 'prognostic biomarkers'.

In this session, we will review biomarkers that can predict adverse responses to experimental drugs, the various technologies that exist to discover predictive and prognostic biomarkers and discuss approaches to help select patients that benefit most from targeted therapies for cancer.

Conflict of interest statement

None declared.