DEFINING OLIGOMETASTATIC NON-SMALL CELL LUNG CANCER (NSCLC)

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The term “oligometastasis” is a composite derived from the Greek words “oligo”, meaning “a few” and “metastasis”, meaning “removal” or migration”. In 1995, Hellman and Weichselbaum introduced the term oligometastasis to refer to a state of limited systemic metastatic disease in which local therapies could be curative [1]. The behavior of metastatic disease is currently considered to be a spectrum in which initially, patients have limited disease in one or a few sites before the metastases become more disseminated [2].

Several subtypes of oligometastatic disease have been described, which are classified according to the initial diagnosis and/or their response to systemic therapy. In synchronous or “de novo” oligometastasis, patients present with oligometastases at the time of initial diagnosis of the NSCLC. Metachronous oligometastatic disease refers to the development of a limited number of metastases after initial diagnosis and treatment of the primary tumor. Two other terms that are frequently used in this setting are “oligoprogression” and “oligopersistence”. In oligoprogression, patients develop a limited number of new metastases in one or a few sites after an initial favorable response to systemic therapy, most commonly targeted therapy, immunotherapy, or a combination of chemo- and immunotherapy. Oligopersistence refers to a situation in which patients have residual metastatic disease at a few sites after a favorable response to initial systemic therapy [2].

Currently, there is no general consensus on which threshold should be used to define oligometastatic disease in terms of the number of sites and lesions involved. To provide a more general definition that is acceptable to all specialists dealing with oligometastatic disease, the European Organization of Research and Treatment of Cancer (EORTC) established a pan-European multidisciplinary group with the goal of developing a consensus definition of oligometastatic disease. The maximum number of lesions and organs involved depend on whether it is possible to offer a radical intent treatment strategy to the patient or not. On the basis of a systematic review, a maximum of five metastases and three organs was proposed as definition of synchronous oligometastatic NSCLC. In addition, the authors clarified that all organs are allowed, except for bone marrow involvement and diffuse serosal metastases (meningeal, pericardial, pleural, and mesenteric), due to the fact that these metastases cannot be treated with radical intent [3].

In order to accurately identify oligometastatic disease, a careful and complete radiological work-up is necessary. In addition to standard computed tomography (CT) scans, a large number of studies advocate the use of brain magnetic resonance imaging (MRI) and fluorodeoxyglucose F 18 positron emission tomography (18F-FDG PET) in the staging of NSCLC. This is also the general consensus in the recommendations of major scientific societies such as the European Society for Medical Oncology (ESMO), National Comprehensive Cancer Network (NCCN), and EORTC [4-7]. MRI has proven to be superior to CT in the detection of brain metastases. The additional use of 18F-FDG PET/CT-scans is associated with improved treatment outcomes as stage migration may occur.
With the publication of the EORTC definition of synchronous oligometastatic NSCLC and its widespread use, there is a prospect of more uniform diagnostic and therapeutic algorithms, once more data become available on this fascinating subgroup of lung cancer patients.

References

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