Key search

We performed a literature search in PubMed, Scopus and Web of Science, for papers published up to September 2020 on MET in non-small lung cancer using the following terms: “MET”, “MET deregulation”, “MET and lung cancer”, “MET exon 14 skipping mutations”, “MET inhibitors”. We also searched for abstracts on main international cancer congresses (ESMO, ASCO, IASLC) websites. We collected and reviewed data of both completed and ongoing studies.

Our search found several review articles about the role of MET in lung cancer and randomised trials on MET inhibitors in non-small cell lung cancer patients. We focused on results from studies with MET tyrosine kinase inhibitors (TKIs), including multitarget TKIs (crizotinib, cabozantinib, merestinib and glesatinib) and selective MET TKIs (capmatinib, tepotinib and savolitinib), in NSCLC patients with MET exon 14 skipping mutations.

The added value of this study is that we review very recent data from both published and ongoing clinical trials. We also provide an overview of most recently identified mechanisms of resistance to MET TKIs, potential therapeutic approaches to overcome resistance and recent evidence about the use of immunotherapy in this molecularly-defined subgroup of patients. We underline the emerging role of MET exon 14 skipping mutation as key oncogene and the importance of routine testing NSCLC tumor samples (tissue and/or ctDNA) for MET alterations.