Current status and further perspectives in the treatment of EGFR mutant non-small cell lung cancer (NSCLC)

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The discovery of EGFR activating mutations in NSCLC set the biologic ground for the use of EGFR tyrosine kinase inhibitors (TKIs) as specific agents targeting this molecular abnormality. As such various TKIs became widely used in first line setting, important peculiarities regarding efficacy and the side effect profile were noted only recently. From this perspective, first and second generation TKIs may account for clinically significant differences which could impact on the choice of the first-line therapy. The treatment at progression remain challenging as different options are recommended in relationship with the clinical course of disease, on one hand, and the type of molecular resistance, on the other hand. Indolent or isolated distant progression does not mandate for immediate change in the first-line therapy. On the other hand, the documentation of the T790M resistant mutation may request for immediate use of osimertinib, a new agent with a specific inhibitory action. This lecture will present the most relevant differences in terms of activity and side effects of the first line TKIs, the current recommendations for treatment of progressive disease and the most promising developments in this specific therapeutic area.