# Biomarker-guided management of NSCLC: Current and future strategies

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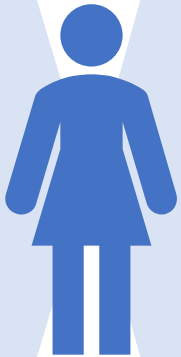
# Clinical case – Jenny

## Patient history

- Female
- 71 years old
- Never-smoker
- Persistent cough
- Haemoptysis
- Dyspnoea
- Fatigue
- Weight loss
- Loss of appetite
- Oedema



## Diagnosis

- **Chest x-ray:** left pleural effusion
- **CT scan:** tumour with 4 cm diameter in the left lower lobe and 3 cm nodule considered to be a metastasis in the liver
- **PET scan:** multiple hypermetabolic masses in the left lung and lymph nodes, hypermetabolic activity in the right supraclavicular region
- **MRI:** no brain metastases

- **Percutaneous thoracocentesis:** pleural effusion drainage and cell pellet
- **Stage IV NSCLC (adenocarcinoma)**

- **ECOG-PS at diagnosis:** 2

## Biomarker-guided treatment

### IHC results

- PD-L1 expression of 60%

### NGS panel results

- *MET* exon 14 skipping mutation
- *TP53* mutation
- Low TMB
- MSS

### Treatment*

- **Capmatinib** (FDA and MHLW approved)[1,2]
- **Tepotinib** (FDA and MHLW approved)[3,4]
- **Crizotinib** (FDA breakthrough designation)[5]
- *Other treatments are under investigation*

* ESMO recommended for patients with NSCLC harbouring *MET* exon 14 mutations [LoE: III; GoR: B][6]

CT, computerized tomography; ECOG-PS, Eastern Cooperative Oncology Group performance status; ESMO, European Society of Medical Oncology; FDA, US Food and Drug Administration; GoR, grade of recommendation; IHC, immunohistochemistry; LoE, level of evidence; *MET*, mesenchymal-epithelial transition factor proto-oncogene; MHLW, Japanese Ministry of Health, Labour and Welfare; MRI, magnetic resonance imaging; MSS, microsatellite stable; NGS, next-generation sequencing; NSCLC, non-small cell lung cancer; PD-L1, programmed death-ligand 1; PET, positron emission tomography; PI, prescribing information; TMB, tumour mutational burden; *TP53*, tumour protein 53.

1. FDA. Capmatinib tablets, PI. 2020; 2. Novartis. Press release, Capmatinib. 29 June 2020; 3. FDA. Tepotinib tablets, PI. 2021; 4. Merck KGaA. Press release, Tepotinib. 25 March 2020; 5. Pfizer. Press release, Crizotinib. 29 May 2018; 6. Planchard D, et al. *Ann Oncol*. 2018;29(Suppl. 4):iv192–237. Updated September 2020. (all accessed 23 June 2021).