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The Role of Adjuvant Atezolizumab in Reducing Recurrence-Related Treatment Costs in Resected Early-Stage PD-L1 High Non-Small Cell Lung Cancer in Belgium

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Background

- Recurrences of non-small cell lung cancer (NSCLC) post-resection are common, with 45% of patients experiencing a recurrence within 5 years.[1]
- NSCLC recurrences are associated with significant morbidity and mortality. The 5-year survival of patients with recurrence post resection and adjuvant chemotherapy is only 35.6%.[1]
- Atezolizumab (ATZ) as monotherapy is indicated as adjuvant treatment following complete resection and platinum-based chemotherapy for adult patients with NSCLC with a high risk of recurrence whose tumours have PD-L1 expression on ≥ 50% of tumour cells and who do not have EGFR mutant or ALK positive NSCLC.
- ATZ demonstrated significant reduction compared to best supportive care (BSC) in the risk of recurrence among patients enrolled in the phase 3 clinical trial IMpower010 (NCT02486718).[2]
- NSCLC recurrences are associated with a substantial economic burden; the availability of adjuvant ATZ treatment was estimated to be associated with €232 million savings in 5 countries in the EU (Germany, Spain, France, Italy and the UK) over a 10-year horizon.[3]

Objective

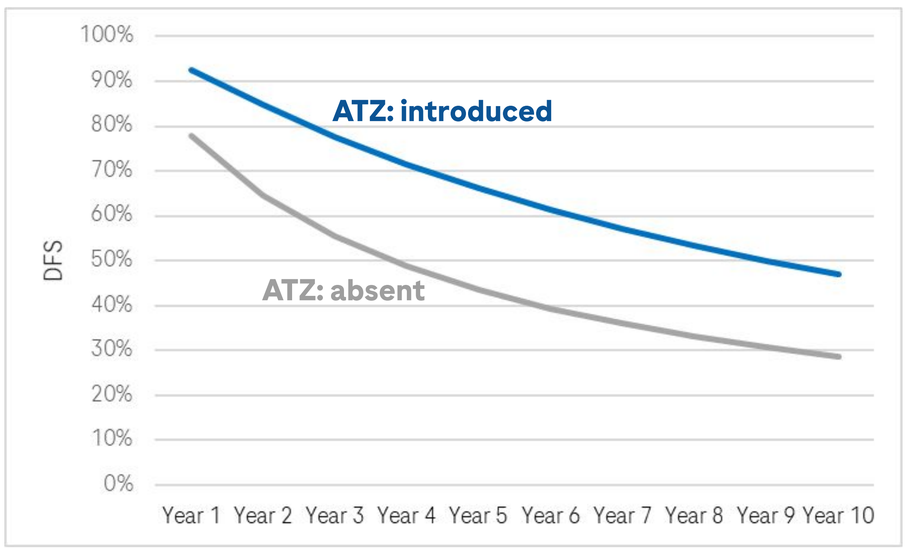
To estimate the **number of recurrences averted** and recurrence-related **reductions in treatment costs** in patients with resected early stage PD-L1 high NSCLC for two scenarios (with introduction of ATZ; with absence of ATZ) in Belgium, over the next decade (2025-2034).

Methods

- A previously developed epidemiological model was used to estimate population-based reductions in the number of operable stage II-IIIA PD-L1 high NSCLC patients experiencing recurrence following the introduction of ATZ[4].
- Inputs included age-specific lung cancer incidence rates and their projections as well as data on staging distribution, biomarker status, tumor histology and adjuvant treatment rates, with data obtained from the Belgian cancer registry and published literature.
- Adjuvant treatment rates and disease-free survival (DFS) were obtained from the IMpower010 clinical trial and were applied to quantify the projected decline in the number relapses over a 10-year period post-ATZ launch relative to best supportive care (BSC).
- Reductions in **treatment costs** were estimated as the per patient cost of treating advanced stage NSCLC. Separate treatment costs were applied to patients who treated with ATZ (recurrence after 12 months of treatment initiation) or BSC, and ATZ (recurrence within 12 months of treatment initiation).
- Sensitivity analyses were performed to address uncertainty surrounding the uptake of ATZ post launch and the extrapolation of disease-free survival.

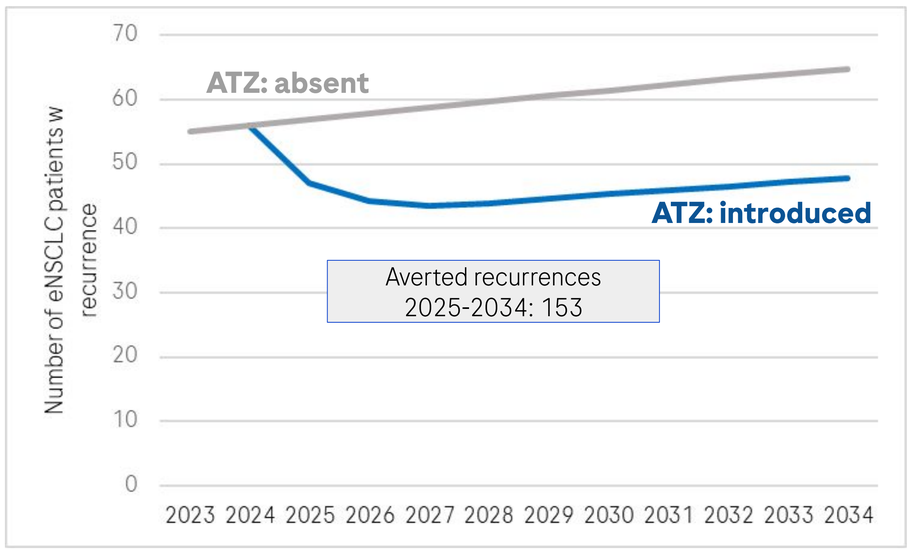
Results

Figure 1: Disease-free survival of eNSCLC patients by scenario



- Out of 1,316 patients projected to be diagnosed with operable early-stage PD-L1 high NSCLC (eNSCLC), 609 were estimated to relapse in a scenario where ATZ was not available.
- In a scenario where adjuvant ATZ was introduced (65% peak uptake), a total of 456 recurrences were projected, translating into a total of 153 potentially avoidable recurrences (-25%) (loco-regional, or distant metastases, or both), over the next decade (2025-2034) (Figure 2).

Figure 2: Estimated number of eNSCLC patients prevented from developing recurrences in Belgium by treatment scenario, 2025-2034



- Following the estimated reductions in the number of recurrences, an estimated **€8.5 million** of downstream treatment costs could be saved in Belgium when adjuvant ATZ was available (ATZ, €19.3 million; BSC, €27.8 million).

ATZ = atezolizumab

Discussion & Conclusion

- The introduction of ATZ for the treatment of PD-L1 high early-stage NSCLC can lead to considerable patient benefits in terms of avoided recurrences that can also translate into a substantial cost saving for Belgium.
- Results are dependent on different input assumptions, DFS curves from clinical trials, and expected treatment utilization assumptions, which might be different in a real world setting.
- Treatment costs were estimated using a pragmatic approach that assumed patients could receive a limited number of treatment options for each type of recurrence and progression event.
- Only direct treatment costs were taken into consideration in this model. Total cost savings, including indirect costs related to the treatment of recurrences, might thus be even larger.

References

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