

Evaluation of the Cost-Effectiveness of a Nationwide Precision Medicine Program for Patients With Advanced Non-Small Cell Lung Cancer in Germany (ISPOR 2024)

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Background:

The national Network Genomic Medicine (nNGM) Lung Cancer offers advanced molecular diagnostics and personalized treatment recommendations for patients with advanced non-small cell lung cancer (aNSCLC). Prior analyses indicated higher survival rates for patients participating in the nNGM precision medicine program compared to routine care. The aim is to compare the treatment costs between aNSCLC patients in the nNGM (nNGM group) and routine care (non-nNGM group).

Methods:

The analysis included patients insured by the German statutory health insurance AOK with an initial diagnosis of aNSCLC receiving systemic oncological therapy between the 04/2019 and 06/2020. Outpatient and inpatient therapy costs for the first six months of therapy were compared between the nNGM group and the non-nNGM group. The data basis for the nNGM group consisted of merged pseudonymised nNGM and AOK data, whereas the non-nNGM group was based on AOK data only.

Results:

A total of 509 patients in nNGM group and 7,213 patients in non-nNGM group were included in the analysis. Total costs in the first six months of therapy (mean €37,095 vs. €33,523 in non-nNGM), as well as outpatient drug costs (mean €17,417 vs. €13,360 in non-nNGM group) were higher in nNGM group compared to the non-nNGM group. The rates of TKI therapy and immunotherapy were higher in nNGM group (10.4% and 62.5%) than in the non-nNGM group (6.3% and 54.7%). Inpatient treatment costs were comparable between groups: €19,678 in nNGM vs. €20,163 in non-nNGM.

Table 1: Patient characteristics (age, sex, OS, therapies in the first 6 months)

	nNGM group n=509	non-nNGM group n=7,213	p
Age, Mean (95% CI)	67.6 (66.7; 68.4)	67.5 (67.3; 67.8)	0.97
Female, n (%)	193 (37.9%)	2,783 (38.6%)	0.99
OS after the first 6 months (%)	66.8%	60.8%	<0.05
Therapies in the first 6 months			
- Chemotherapies, n (%)	413 (81.1%)	6,189 (85.8%)	<0.01
- Immunotherapies, n (%)	318 (62.5%)	3,943 (54.7%)	<0.001
- TKI therapies, n (%)	53 (10.4%)	452 (6.3%)	<0.001

Table 2: Therapy costs in the first 6 months in euros, average (95% CI)

	nNGM group n=509	non-nNGM group n=7,213	p
Inpatient treatment costs & outpatient medication costs	37,095 (34,918 – 39,271)	33,523 (32,997 – 34,048)	<0.001
- Inpatient treatment costs	19,678 (17,555 – 21,801)	20,163 (19,686 – 20,640)	0.61
- Outpatient medication costs	17,417 (15,759 – 19,074)	13,360 (12,927 – 13,793)	<0.001

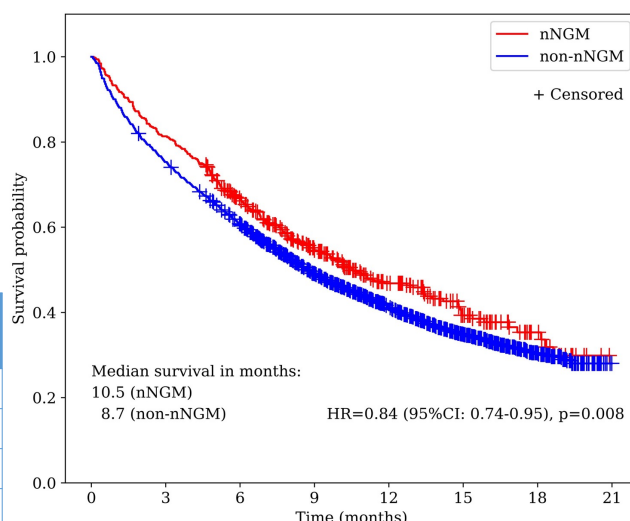


Figure 1: Kaplan-Meier survival curves comparing overall survival (OS) between the nNGM and non-nNGM groups.

Conclusion:

The analysis reveals that compared to standard care, treatment in nNGM is associated with increased costs, primarily due to higher utilization of targeted and immuno-oncological drugs. However, these increased costs in the context of nNGM participation due to higher utilization of personalized therapies are also associated with improved survival. Further in-depth cost analyses will be conducted.

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