

Budget impact analysis of tenecteplase versus alteplase for adults with acute ischaemic stroke (AIS) in Greece

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Introduction

- Stroke is the third leading cause of death and fourth leading cause of disability-adjusted life years (DALYs); therefore, making the economic burden of post-stroke care substantial in relation to formal and informal care.¹⁻³
- In Greece, stroke is the second leading cause of death and the second largest cause of complex disability in adults.⁴
- AIS accounts for approximately 70% of all strokes.⁵ AIS is defined by the sudden loss of blood flow to an area of the brain resulting in loss of neurologic function.⁵ Timely diagnosis and prompt initiation of appropriate treatment are critical factors that significantly impact stroke survival and health outcomes.⁵
- Boehringer Ingelheim currently have two medicines indicated for the thrombolytic treatment of AIS: alteplase (Actilyse[®]) and tenecteplase (Metalyse[®]).
- This study evaluates the budget impact to the healthcare system of reimbursing tenecteplase 0.25 mg/kg for the thrombolytic treatment of adults with AIS as an option for AIS that are hospitalized and eligible for thrombolysis, from the perspective of the third-party payer of healthcare services, namely the National Organization for Healthcare Services Provision (EOPYY).

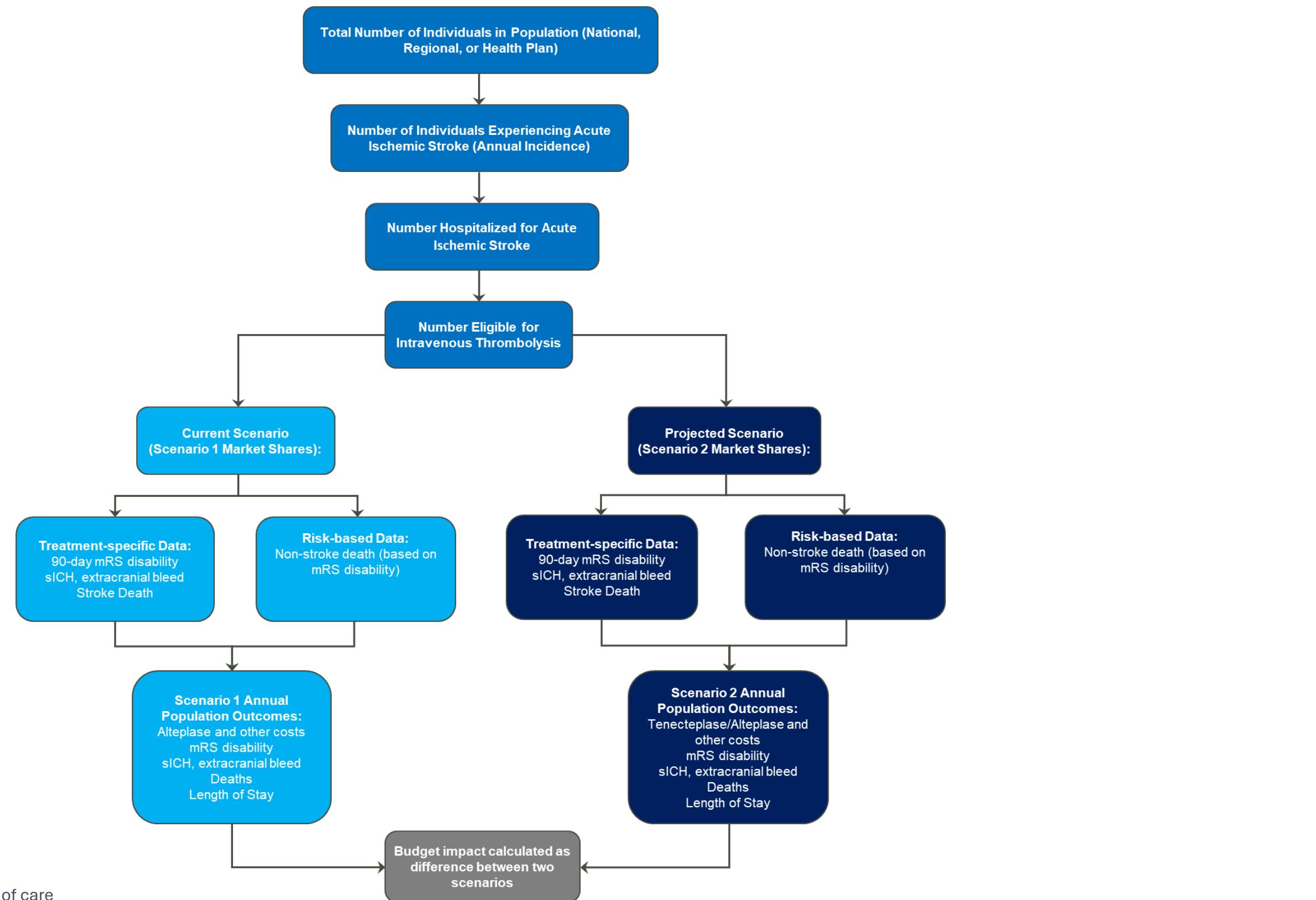
Methods

- A model developed for the healthcare system in the UK was adapted to calculate the impact on the budget of EOPYY, of reimbursing tenecteplase for the treatment of AIS in Greece over a five-year period (2025–2029).
- Epidemiological data were sourced from the literature and local expert estimates.
- Cost data were sourced from published sources and are presented in 2024 Euros.
- Only direct medical costs related to drug acquisition, disease management and adverse event costs, were considered in the analysis.
- Two market scenarios were compared: a current scenario, where tenecteplase is not reimbursed, and a future scenario, where tenecteplase is reimbursed for up to 68% of eligible patients.
- Outcomes were incremental cost and total budget impact for all eligible AIS patients.

Results

- The total annual number of AIS patients eligible for the intervention was 450.
- Patients on tenecteplase were estimated to increase from 180 in 2025 to 270 patients in 2029.
- Budget impact was projected to increase from €12,220 in year 1 to €13,849 in year 5, at a cumulative impact of €65,172 for the 5-year period.
- Tenecteplase use resulted in savings in both immediate (acute) hospitalization and post event (1st year) hospitalization costs for AIS patients, thus offsetting its acquisition cost.

Figure 1. Budget impact model flow diagram



Abbreviations: mRS, modified Rankin score; sICH, symptomatic intracerebral haemorrhage; SoC, standard of care

Table 1. Tenecteplase versus alteplase

	Year 1 (€)	Year 2 (€)	Year 3 (€)	Year 4 (€)	Year 5 (€)
Annual total cost					
World without tenecteplase	€3,673,705	€3,673,705	€3,673,705	€3,673,705	€3,673,705
World with tenecteplase	€3,685,925	€3,686,332	€3,686,739	€3,687,147	€3,687,554
Annual budget impact	€12,220	€12,627	€13,034	€13,442	€13,849
Cumulative cost breakdown (annual results also available)					
World without tenecteplase	Drug costs	€250,126	€250,126	€250,126	€250,126
	Acute hospitalisation costs	€1,017,736	€1,017,736	€1,017,736	€1,017,736
	Annual post-hospitalisation costs	€2,405,842	€2,405,842	€2,405,842	€2,405,842
	Total	€3,673,705	€3,673,705	€3,673,705	€3,673,705
	Drug costs	€300,328	€302,002	€303,675	€305,348
World with tenecteplase	Acute hospitalisation costs	€1,010,109	€1,009,855	€1,009,600	€1,009,346
	Annual post-hospitalisation costs	€2,375,487	€2,374,476	€2,373,464	€2,372,452
	Total	€3,685,925	€3,686,332	€3,686,739	€3,687,147
	Drug costs	€50,202	€51,876	€53,549	€55,223
	Acute hospitalisation costs	-€7,628	-€7,882	-€8,136	-€8,390
Budget impact	Annual post-hospitalisation costs	-€30,355	-€31,367	-€32,379	-€33,391
	Total	€12,220	€12,627	€13,034	€13,442

Disclosure:
 • The authors meet criteria for authorship as recommended by the ICMJE.
 • The authors did not receive payment related to the development of the abstract/poster. GP, NN and CS are employees of Boehringer Ingelheim.
 • Boehringer Ingelheim was given the opportunity to review the manuscript for medical and scientific accuracy as well as intellectual property considerations.
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Key take aways



This study evaluated the budget impact to the healthcare system of reimbursing tenecteplase as a treatment option for AIS patients that are hospitalized and eligible for thrombolysis, from the perspective of the third-party payer of healthcare services, namely EOPYY.



Results showed that the reimbursement of tenecteplase for this indication would result in a cumulative increase to the budget over five years of approximately €65K mainly driven by drug costs.



The same analysis confirmed measurable savings in both acute and post event hospitalization costs.



This anticipated, marginal additional cost over the five years horizon of this model is well defined and predictable.

Table 2. Cumulative summary output of the Tenecteplase BIM

	Year 1 (€)	Year 2 (€)	Year 3 (€)	Year 4 (€)	Year 5 (€)
Cumulative total cost					
World without tenecteplase					
World with tenecteplase					
Cumulative BI	€12,220	€24,847	€37,881	€51,323	€65,172

Abbreviations: BI = budget impact, BIM= budget impact model

Figure 2. Graphical representation of illustrative budget impact

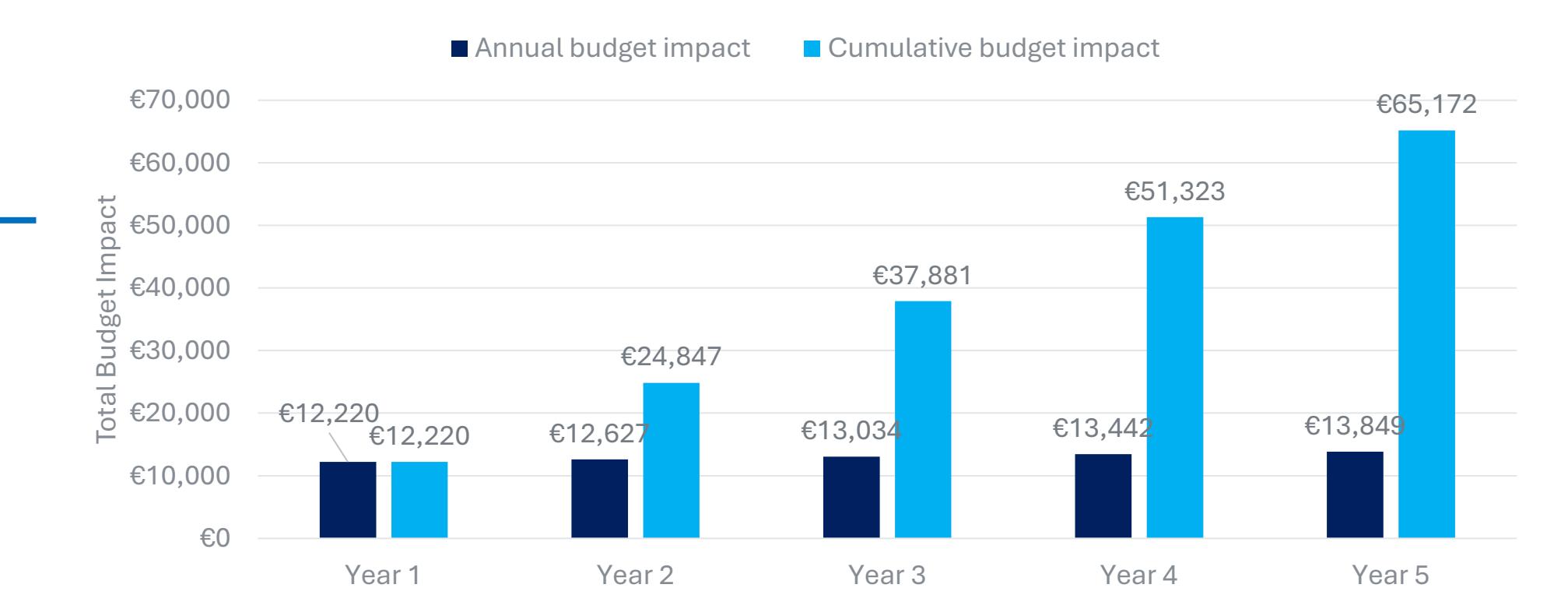


Figure 3. Graphical representation of break down of budget impact

