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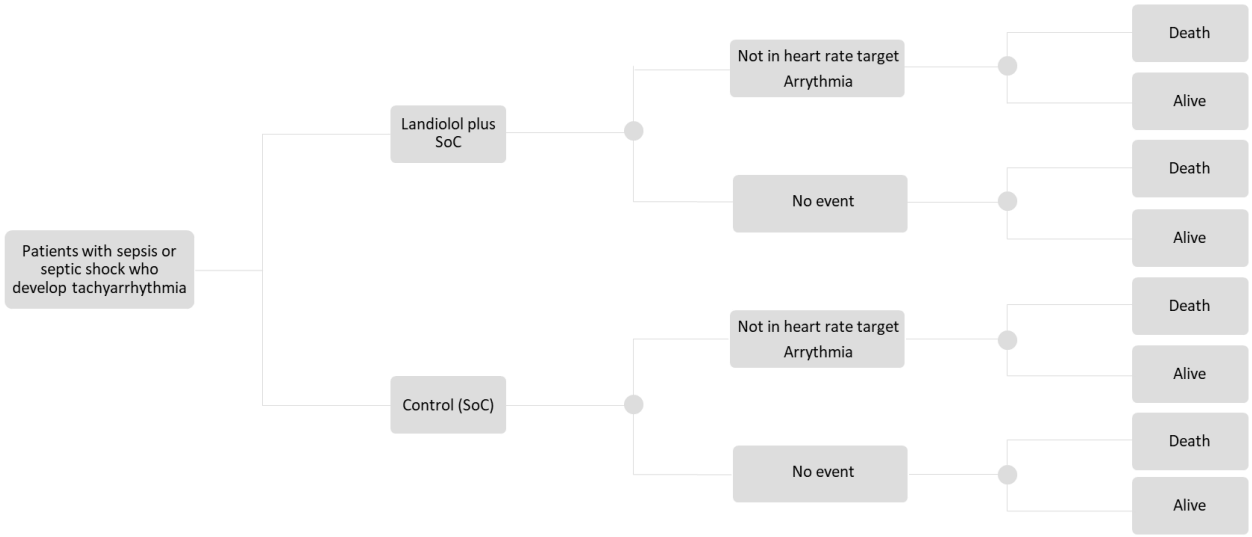
Economic evaluation of landiolol vs standard of care for the treatment of patients with sepsis-related tachyarrhythmia in Italy

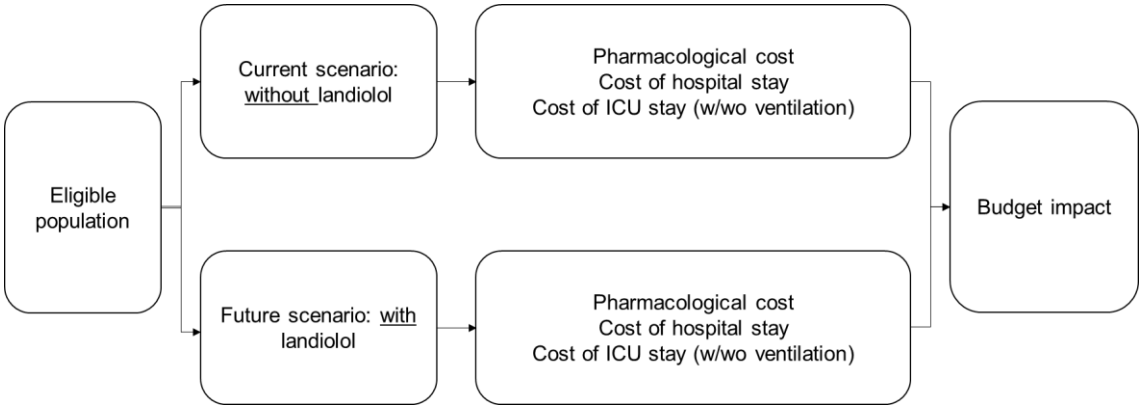
Supplementary material

Supplementary Figure 1. Model structure of the cost-effectiveness analysis



SoC: Standard of Care

Supplementary Figure 2. Model structure of the budget-impact analysis



ICU: Intensive Care Unit

Supplementary Table I. Clinical data: results of the Landi-SEP trial [10]

Endpoint	Landiolol	Control	p-value
HR response (target HR reached and maintained)*	58.2%	29.6%	<0.001
HR response (target HR reached, not necessarily maintained)**	75.5%	42.9%	<0.001

**HR response definition (target HR reached and maintained): 3 subsequent hourly HR values at 80 – 94 bpm or < 80 bpm and not clinically significant), HR maintenance (defined as not recording 3 subsequent hourly HR values > 94 bpm or < 80 bpm after achievement of HR response), and no increase in vasopressor requirements during the first 24 h after treatment*

***HR response definition (target HR reached, not necessarily maintained): 3 subsequent hourly HR values at 80–94 bpm or < 80 bpm and not clinically significant during the first 24 h after treatment*

Supplementary Table II. Drug consumption and costs

Treatment*	Landiolol group		Control group		Unit cost (€ per mg)
	Rate (%)	Total dose (mg)	Rate	Total dose (mg)	
Landiolol	100%	787	0.0%	-	0.91
Norepinephrine	100%	87	100.0%	79	0.32
Vasopressin	43.9%	51.2	36.7%	33.4	2.50**
Terlipressin	6.1%	2	4.1%	5	19.41
Dopamine	4.1%	877	4.1%	250	0.003
Epinephrine	3.1%	1	4.1%	4	0.56

**Treatment used in less than 3 patients were excluded*

***Cost per UI*

Supplementary Table III. Resource use and costs considered in the analysis

Resource	Cost per day (€)*	Resource use		
		Landiolol	Control	p-value
Hospital days	€ 773	21.6**	27.0°	0.50
ICU days	€ 1,497	14.0	13.9	0.55

**Cost actualized to 2025*

***Calculated considering an HR of 0.80 favouring landiolol vs control*

°*Assumed equal to median study duration*

HR: Hazard ratio; ICU: Intensive Care Unit

Supplementary Table IV. Base case analysis: pharmaceutical costs

Treatment	Total dose (mg)	Cost per mg	Total cost (€)
Landiolol	900	0.91	818.16
Metoprolol	105	0.09	9.87
Esmolol	9,600	0.03	326.67
Amiodarone	4,200	0.01	22.34
Other*	-	-	55.63

**Including cardioversion, bisoprolol, digoxin and amoxin*

Supplementary Table V. Scenario analysis: Patient distribution by treatment

Treatment	Current scenario	Future scenario		
		Year 1	Year 2	Year 3
Landiolol	4.6%	8.1%	11.0%	14.0%
Metoprolol	8.7%	8.0%	7.3%	6.7%
Esmolol	15.4%	14.8%	14.3%	13.7%
Amiodarone	64.1%	62.3%	60.9%	59.4%
Other	7.2%	6.8%	6.5%	6.2%
Total	100%	100%	100%	100%

Supplementary Table VI. Results of budget impact analysis – 2nd scenario analysis

Cost Components	Current scenario	Future scenario		
		Year 1	Year 2	Year 3
Costs hospital stay (normal ward) (€)	205,014,094	198,042,050	195,545,886	192,963,647
Costs ICU stay (€)	421,235,831	421,481,300	421,569,183	421,660,098
Drug costs (€)	1,215,664	2,432,168	2,867,707	3,318,264
Total costs (€)	627,465,589	621,955,517	619,982,776	617,942,008
Difference vs current scenario (€)	-	*-€ 5,510,072*	*-€ 7,482,813*	*-€ 9,523,581*

ICU: Intensive Care Unit