

SUPPLEMENTARY MATERIAL

Manuscript

Cost-effectiveness of tiotropium versus salmeterol: the POET-COPD trial

Table A1: German unit costs POET-COPD trial (2010, €)

Type of care	Unit		SHI perspective	Societal perspective*
Study medication [1]	Tiotropium HandiHaler	Day 1-30	1.73/day	2.31/day
		Day 31-365	1.58/day	1.99/day
	Salmeterol	Day 1-365	1.01/day	1.15/day
		Day 1-30	1.75/day	2.29/day
		Day 31-365	1.62/day	2.03/day
		Not ICU	1 day	1041.93
	2 days	1802.02		
	3-17 days	2562.11		
	18 days or longer	2562.11 + (number of days -17) *191.56		
Hospitalization [2,3]	ICU	3-17 days	3017.62	SHI perspective + €10 per day with a maximum of €280 per year ¹
		18 days or longer	3017.62 + (number of days -17) *191.56	
Emergency Room without hospitalization [4]		Visit	15,58 per quarter Each additional visit 10.83	15,58 per quarter Each additional visit 10.83
Ambulance [5]		Ride	397.36	404.85
General Practitioner [4]	Visit to practice	<60 yr	31.50 per quarter	41.50 per quarter
		>=60 yr	35.70 per quarter	45.70 per quarter
	Home visit		21.75 per visit	21.75 per visit
Specialists [4]				
Lung physician	Visit	<60 yr	19.95 per quarter	29.95 per quarter
		>=60 yr	20.83 per quarter	30.83 per quarter
	Home visit		21.75 per visit	21.75 per visit
Cardiologist	Visit	<60 yr	20.48 per quarter	30.48 per quarter
		>=60 yr	21.18 per quarter	31.18 per quarter
	Home visit		21.75 per visit	21.75 per visit
Internist	Visit	<60 yr	19.95 per quarter	29.95 per quarter

		>=60 yr	21.35 per quarter	31.35 per quarter
	Home visit		21.75 per visit	21.75 per visit
Table 1 continued				
Type of care			SHI perspective	Societal perspective
Other healthcare provider (assumed to be physiotherapist)	Visit		€10.40 per visit	€12.80 per visit
Concomittant medication [#] [6]	Inhaled corticosteroids (R03BA)		€0.59/day	€0.69/day
	Short-acting anticholinergic (R03BB)		€1.07/day	€1.48/day
	Short-acting β -agonist (R03AC)		€0.43/day	€0.50/day
	Methylxanthine (R03DA)		€0.23/day	€0.27/day
	Mucolytics (R05CB)		€0.40/day	€0.47/day
	Antibiotics (J01)		€1.63/day	€1.98/day
	Systemic corticosteroids (oral) (H02AB)		€0.30/day	€0.35/day
Travel costs [7]		Costs per kilometer (km)	-	€0.20
Productivity costs [8]	Males	Full-time	-	€21.99
		Part-time	-	€6.78
	Females	Full-time	-	€7.73
		Part-time	-	€6.19

* Costs from the societal perspective were calculated as the costs from the SHI perspective plus potential patients' co-payments, except for medication. The societal costs of medications were based on the list price in 2010, while medication costs from the SHI perspective were calculated as the list price minus mandatory discounts to the SHI and pharmacies and the patients' co-payments. Costs paid by the patients or their families consisted of costs of patients' co-payments for hospitalizations, ambulance transportation, visits to health care providers, medication, and costs of travelling

Unit costs are weighted average unit costs within the specific ATC subgroup using the number of DDDs as a weight

References

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Table A2: Annual costs of maintenance treatment from the SHI perspective, in €2010

Costs of maintenance therapy (per year)	Moderate COPD					Severe COPD					Very severe COPD				
	Resource use		Unit cost	Total cost		Resource use		Unit cost	Total costs		Resource use		Unit cost	Total costs	
	mean	SE		mean	SE	mean	SE		mean	SE	mean	SE		mean	SE
Outpatient visits to general practitioner*	4.84	0.42	19.54	94.57	8.18	4.10	0.30	19.54	80.11	5.95	0.00	0.00	19.54	0.00	0.00
Outpatient visits to respiratory specialists*	1.03	0.12	21.16	21.80	2.55	3.35	0.31	21.16	70.97	6.53	7.12	0.67	21.16	150.68	14.26
Spirometries*	3.00	0.27	5.95	17.85	1.63	5.00	0.26	5.95	29.75	1.56	6.00	0.36	5.95	35.70	2.11
Influenza vaccination (%)*	0.60	0.03	18.15	10.89	0.59	0.71	0.03	18.15	12.89	0.54	0.75	0.03	18.15	13.61	0.53
Pneumococcal vaccination (%)*	0.38	0.04	27.82	10.57	0.98	0.48	0.04	27.82	13.35	1.08	0.52	0.04	27.82	14.47	1.12
Days antibiotics used**	2.31	0.62	1.63	3.77	1.01	4.75	1.53	1.63	7.74	2.49	0.92	0.47	1.63	1.50	0.77
Days systemic steroids used**	26.46	4.08	0.30	7.94	1.22	38.54	4.98	0.30	11.56	1.49	17.44	7.75	0.30	5.23	2.33
Days short-acting beta-agonists used**	9.27	2.44	0.43	3.99	1.05	5.67	1.85	0.43	2.44	0.80	7.35	7.77	0.43	3.16	3.34
Days short-acting anticholinergics used**	0.81	0.48	1.07	0.87	0.51	0.90	0.78	1.48	1.33	1.15	13.76	8.31	1.48	20.36	12.30
Days inhaled corticosteroids used**	84.46	6.27	0.59	49.83	3.70	89.51	7.21	0.59	52.81	4.25	88.57	20.10	0.59	52.26	11.86
Days theophylline used**	55.86	5.33	0.23	12.85	1.23	81.29	7.15	0.23	18.70	1.64	58.70	16.10	0.23	13.50	3.70
Days mucolytics used**	6.62	1.82	0.40	2.65	0.73	9.75	2.54	0.40	3.90	1.02	7.32	4.04	0.40	2.93	1.62
Days oxygen used**	0.86	0.26	4.63	3.98	1.20	3.71	0.63	4.63	17.18	2.92	5.81	1.72	4.63	26.90	7.96
Travel (km)**	-	-	0.20	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.20	0.00	0.00
Total costs				241.55	9.92				322.73	11.08				340.30	24.46

* Source resource use: German expert panel: Bowles D, Von der Schulenburg JM. Ökonomische Bewertung ambulanter Arztkontakte von COPD-Patienten in Deutschland – Ergebnisse einer Befragung von Allgemeinmedizinern und Pneumologen (In German). *Pneumologie*. 2011. **65**(6): 379-87.

** Source resource use: German patients in POET-COPD trial

Table A3: Costs per COPD exacerbation from the SHI perspective, in €2010

Hospitalization costs	Non-severe exacerbation					Severe exacerbation				
per exacerbation	Resource use		Unit cost	Costs		Resource use		Unit cost	Costs	
	mean	SE		mean	SE	mean	SE		mean	SE
ICU days	na	na	na	na	na	0.53	0.27	321.02	170.14	86.68
Non-ICU days	na	na	na	na	na	10.26	1.05	268.74	2,758.35	282.63
Ambulance rides	na	na	na	na	na	0.43	0.03	397.36	169.24	10.29
Total costs									3,097.73	295.80
Non-hospital costs	Non-severe exacerbation					Severe exacerbation				
per exacerbation	Resource use		Unit cost	Costs		Resource use		Unit cost	Costs	
	mean	SE		mean	SE	mean	SE		mean	SE
Outpatient visits to general practitioners	0.55	0.04	19.54	10.65	0.82	0.40	0.09	19.54	7.74	1.85
Outpatient visits to respiratory specialists	0.63	0.04	21.16	13.33	0.92	0.64	0.16	21.16	13.58	3.42
Outpatient visits to non-respiratory specialists	0.07	0.02	21.52	1.45	0.38	0.00	0.00	21.52	0.00	0.00
Outpatient visits to other health care providers	0.01	0.00	10.40	0.10	0.03	0.08	0.04	10.40	0.83	0.38
ER visits not followed by hospital admission	0.02	0.01	15.58	0.31	0.09	0.34	0.08	15.58	5.30	1.26
Ambulance rides to emergency room	0.02	0.06	397.36	7.95	23.84	0.23	0.06	397.36	91.39	25.43
Days antibiotics	7.59	1.05	1.63	12.37	1.71	6.91	1.24	1.63	11.27	2.02
Days systemic steroids	10.23	1.13	0.30	3.07	0.34	29.46	10.93	0.30	8.84	3.28
Days short-acting beta-agonists	0.49	0.32	0.43	0.21	0.14	8.61	7.47	0.43	3.70	3.21
Days short-acting anticholinergics	0.01	0.01	1.07	0.01	0.01	3.07	1.18	1.07	3.29	1.26
Days inhaled corticosteroids	3.16	1.22	0.59	1.86	0.72	1.61	1.08	0.59	0.95	0.64
Days theophylline	2.48	0.74	0.23	0.57	0.17	10.44	5.36	0.23	2.40	1.23
Days mucolytics	2.61	1.17	0.40	1.04	0.47	9.20	5.68	0.40	3.68	2.27
Travel (km)	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.20	0.00	0.00
Total costs				52.94	23.96				152.97	26.41
Total costs of exacerbation				52.94	23.96				3250.70	296.97

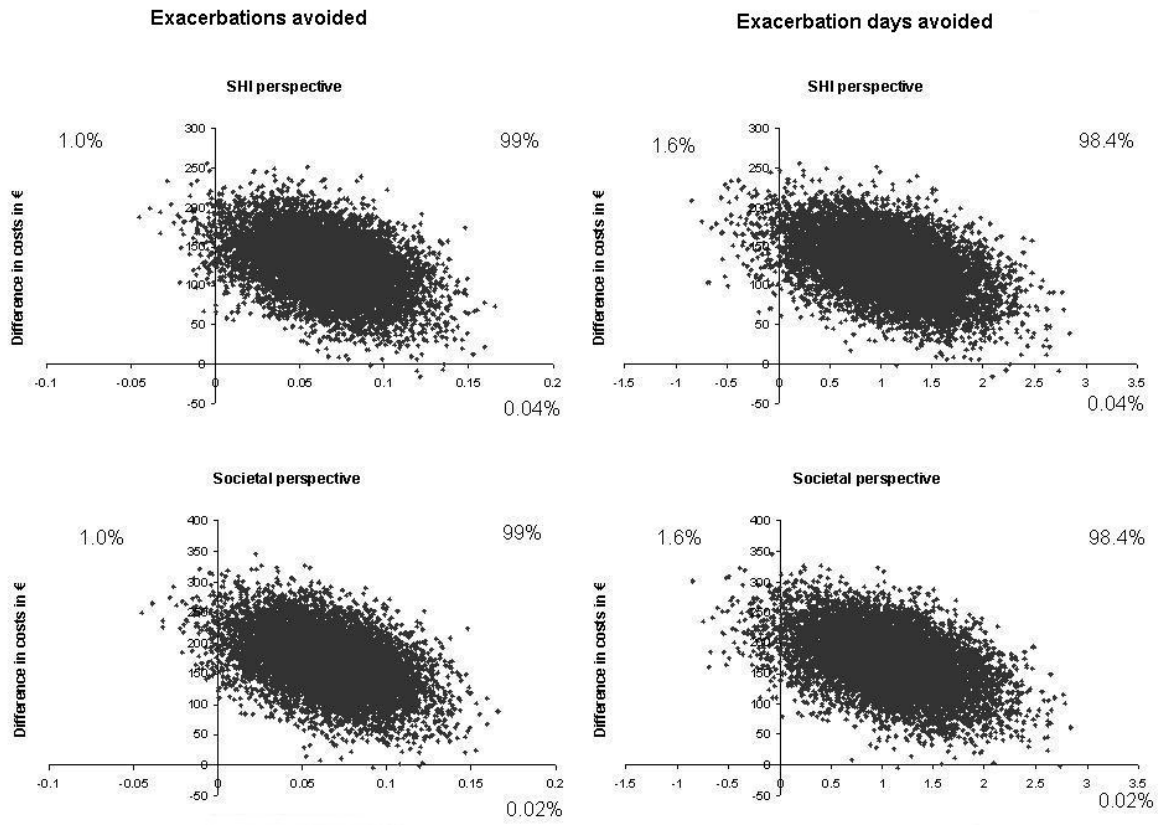


Figure A1: Cost-effectiveness planes for tiotropium versus salmeterol: exacerbations and exacerbation days avoided, SHI and societal perspective