

Direct healthcare cost comparison of Fluticasone propionate/Salmeterol vs MART for moderate/severe asthma: Results from Thailand

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Background

- Inhaled corticosteroid/long-acting β2-agonist (ICS/LABA) i.e. regular Fluticasone propionate/Salmeterol (FP/salm) or ICS/Formoterol Maintenance And Reliever Therapy (MART) are the recommended options for moderate/severe asthma (1).
- There is limited data comparing treatment cost between both strategies in a resource limited setting in countries like Thailand.

Methods

- Data from 3 published randomized trials in asthma patients aged ≥ 12 years comparing regular twice-daily FP/salm with as-needed short acting beta-2 agonist (SABA) vs Budesonide/Formoterol MART in moderate/severe asthma:
 - AHEAD (NCT00242775/17 countries/2309 patients) (2)
 - COMPASS (AstraZeneca study SD-039-0735/16 countries/3335 patients) (3)
 - COSMOS (AstraZeneca study SD-039-0691/16 countries/2143 patients) (4) were calculated direct healthcare costs.
- Numbers of resource use per patient by studies are shown in Table 1.

Economic Analysis

- Total direct treatment cost** comparison/patient/year was calculated as a combination from
 - Medication costs plus
 - Healthcare utilization costs i.e. cost for health care visit, emergency room visit, and hospitalization.
- Medication costs were referred from Thailand median price 2020, National drug information (5). Cost of medications were based on the licensed dose and calculated as THB/dose or THB/puff.
- Healthcare utilization costs were referred from Health Intervention and Technology Assessment (HITAP), Ministry of Public Health (6).
- Unit cost of resource utilization are shown in Table 2.
- Percent saving total cost** by FP/Salm was calculated by $[(\text{total treatment cost MART} - \text{total treatment cost FP/Salm}) / \text{total treatment cost MART}] \times 100$.

Results

- Medication, healthcare utilization, and total direct treatment cost by studies as baht/patient/year across the 3 studies and per treatment arms were shown in Table 3.
- Percent saving of total direct treatment costs by FP/salm+SABA was 45% lower than with MART.
- Total direct treatment cost by treatment options in each study are shown in Figure 1.

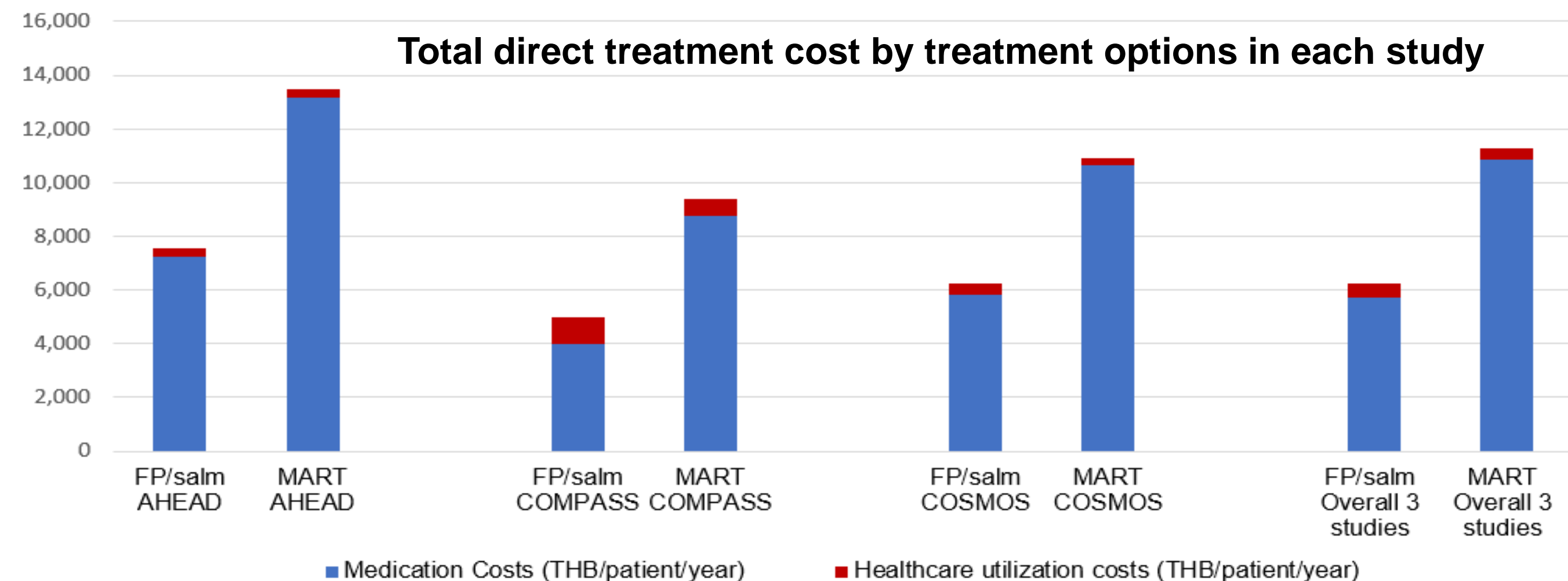
	AHEAD		COMPASS		COSMOS	
	FP/Salm	MART	FP/Salm	MART	FP/Salm	MART
Medication use/patient/day						
Bud/Form+Bud/Form (160/4.5 µg)	-	4.879	-	3.250	-	3.94
Bud/form (320/9 µg)	-	-	-	-	-	-
FP/salm (125/25 µg)	-	-	4.304	-	-	-
FP/salm (100/50 µg)	-	-	-	-	0.233	-
FP/salm (250/50 µg)	-	-	-	-	1.214	-
FP/salm (500/50 µg)	1.978	-	-	-	0.490	-
Salbutamol	-	-	-	-	0.907	-
Terbutaline (0.4 mg)	0.995	-	1.036	-	-	-

	AHEAD		COMPASS		COSMOS	
Healthcare use/patient/year						
Hospitalization						
Intensive care unit (ICU)	0	0.01	0.012	0.048	0.005	0.009
General ward	0.05	0.06	0.296	0.074	0.09	0.05
Healthcare visit						
Emergency department	0.104	0.094	0.178	0.134	0.06	0.04
Specialist	0.240	0.152	0.408	0.314	0.24	0.17
General practitioner	0.192	0.168	0.270	0.282	0.37	0.32
Other	0.056	0.028	0.096	0.074	0.10	0.05
Home visit						
General practitioner	0.016	0.010	0.016	0.006	0.04	0.03
Other	0.006	0.002	0.044	0.006	0.01	0

Conclusion

- Total direct treatment costs with regular twice-daily FP/salm with as-needed SABA were lower than with Bud/Form MART primarily due to lower medication costs.
- % Saving by FP/salm+SABA was 45% for total direct treatment cost compared to MART. Health care cost should be considered for asthma patient care in Thailand.

Thai Baht/patient/year



Medication cost, per patient per dose/puff	Thai Baht
Bud/form + Bud/Form (160/4.5 µg)	7.42
Bud/form (320/9 µg)	10.52
FP/salm (125/25 µg)	2.50
FP/salm (100/50 µg)	6.42
FP/salm (250/50 µg)	7.79
FP/salm (500/50 µg)	9.95
Salbutamol	0.23
Terbutaline (0.4 mg)	0.23
Healthcare utilization costs	
Hospitalization, per day	
Intensive care unit (ICU)	5,070
General ward	1,953
Healthcare visit, per visit	
Emergency room (21)	796.36
Specialist	306
General care physician	101
Other	118
Home visit (13), per visit	
General care physician	359.3
Other	359.3

	Treatment arm	Medication costs (THB)	Healthcare utilization costs (THB)	Total direct treatment costs (THB)	% Savings in Total cost by FP/Salm*
AHEAD	FP/salm	7,248	288	7,536	44%
	MART	13,175	314	13,489	
COMPASS	FP/salm	3,998	966	4,964	47%
	MART	8,776	632	9,408	
COSMOS	FP/salm	5,839	390	6,228	43%
	MART	10,640	276	10,916	
Overall** (3 studies)	FP/salm	5,695	548	6,243	45%
	MART	10,864	407	11,271	

References

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Poster presentation: Thai Asthma Council (TAC) meeting 11-12 Mar 2021, Bangkok, Thailand.

Conflict of Interest Declaration: TB, JK are employees of GSK. WB has received personal fees from AstraZeneca Thailand, Boehringer Ingelheim and Thai Otsuka. BA is an employee of GSK and holds shares. There are no other conflicts of interest to declare.