
Demographic and Clinical Characteristics of Patients with Severe Asthma in the Asian Pacific Region: data from the International Severe Asthma Registry (ISAR)

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Background: The International Severe Asthma Registry (ISAR) shares data from asthma registries across the globe using standardized variables.¹

Method: ISAR collected data prospectively from adult patients with severe asthma from Taiwan, Japan, India, South Korea and Australia from January 2017 and April 2022. Here we describe their baseline demographic and clinical characteristics at the time of biologic initiation or first visit for those who had, and had not, previously received biologic, respectively.

Results: A total of 1326 patients from the Asia Pacific region were included (Table). Australian patients had early onset, high exacerbation burden (32.7% with > 3/year), prevalence of fixed airways obstruction (66.7%), and eosinophilic phenotype pre-biologic (78.9%), and subsequent high long-term (>90 days) OCS (40.3%) and biologic use (52.5%). Indian patients typically had uncontrolled asthma (>90%) but low exacerbation rates, poor lung function, low prevalence of long-term OCS (12.0%) and biologic use (1.7%). Japanese and Taiwanese patients typically had well-controlled disease, good lung function, experienced <2 exacerbations/year, with about 25% receiving long-term OCS. While Japanese patients had a high prevalence of biologic use (55.1%) and LTRA (48.3%) add-on, Taiwanese patients were more likely to receive LAMA (46.9%). Patients from South Korea were characterized by low exacerbation burden (<1/year), good lung function, and high prevalence LAMA (41.1%).

Conclusions: There is substantial inter-country heterogeneity in the clinical characteristics of severe asthma patients in the Asia-Pacific region, likely a consequence of differences in access to severe asthma services, treatments and/or variability in biologic eligibility and socioeconomic status.

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Table: Demographic and clinical characteristics of adult patients with severe asthma in Asian Pacific Region

	AU (n=404)	IN (n=234)	JP (N=205)	SK (N=190)	TW (N=293)
Age, mean (SD)	57.5 (14.6)	44.8 (15.2)	60.7 (14.3)	56.9 (13.8)	59.4 (16.1)
Age of asthma onset, mean (SD)	22.9 (19.8)	30.3 (15.3)	40.4 (17.7)	42.7 (18.7)	44.4 (20.9)
Exacerbations^a	N=262	N=198	N=131	N=176	N=207
Mean (SD)	2.4 (3.3)	0.6 (0.7)	1.9 (3.1)	0.4 (0.9)	1.4 (2.1)
3+, n (%)	107 (32.7)	3 (1.5)	28 (21.4)	7 (4.0)	25 (16.9)
Asthma control^b	N=252	N=65	N=112	N=153	N=202
Uncontrolled, n (%)	143 (56.7)	60 (92.3)	39 (34.8)	70 (45.8)	68 (33.7)
Lung function	N=150	N=102	N=106	N=146	N=205
PB ppFEV ₁ , < 80%, n (%)	60 (40.0)	63 (61.8)	59 (55.7)	59 (40.4)	112 (54.6)
FEV ₁ /FVC < 0.7, n (%)	100 (66.7)	46 (45.1)	56 (52.8)	85 (58.2)	94 (45.9)
Eosinophilic phenotype^{2c}	N=57	N=54	N=49	N=55	N=72
Grade 3, n (%)	46 (78.9)	38 (70.4)	30 (61.2)	36 (65.5)	50 (69.4)
Grade 2, n (%)	10 (17.5)	10 (18.5)	11 (22.4)	7 (12.7)	12 (16.7)
Grade 1, n (%)	2 (3.5)	5 (9.3)	7 (14.3)	9 (16.4)	10 (13.9)
Grade 0, n (%)	0	1 (1.9)	1 (2.0)	3 (5.5)	0
Add on to ICS/LABA					
LAMA, n (%)	19 (4.7)	41 (17.5)	38 (18.5)	78 (41.1)	138 (47.1)
Theophylline, n (%)	1 (0.2)	9 (3.8)	41 (20.0)	2 (1.1)	38 (13.0)
LTRA, n (%)	4 (1.0)	56 (23.9)	99 (48.3)	46 (24.2)	112 (38.2)
Macrolides, n (%)	5 (1.2)	28 (12.0)	35 (17.1)	6 (3.2)	11 (3.8)
LTOCS ^d n (%)	163 (40.3)	28 (12.0)	52 (25.4)	39 (20.5)	73 (24.9)
Biologic ^e n (%)	212 (52.5)	4 (1.7)	113 (55.1)	33 (17.4)	105 (35.8)

^aTotal number of exacerbations recorded within 1 year before the biologic initiation visit or the first visit; ^bAssessed by ACQ and ACT scores at biologic initiation visit or the first visit for patients who had never received biologic treatment; ^cISAR Eosinophilic phenotype grades¹ are calculated based on BEC, FeNO, LTOCS, asthma onset and nasal polyps; ^dLong term (continually use for > 3 months) OCS; ^eAnti-IgE, Anti-IL5/5R, and Anti-IL4; AU: Australia; BEC: blood eosinophil count; IgE: Immunoglobulin E; FeNO: Fractional exhaled Nitric Oxide; FEV₁: forced expiratory volume in one second; FVC: forced vital capacity; IL: interleukin; ICS/LABA: inhaled corticosteroid/long-acting β -agonist (LABA); IN: India; JP: Japan; LAMA: Long-acting muscarinic antagonist; OCS: oral corticosteroid; LTRA: Leukotriene receptor antagonist; SD: standard deviation; SK: South Korea; TW: Taiwan

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