



The Administration of Omalizumab and SARS-CoV-2 Vaccine amid COVID-19 Pandemic in Ramathibodi Hospital: Nursing Car Perspectives and Clinical Case Review

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Background

Omalizumab is approved and reimbursable T2 biologics for treating severe asthma in Thailand. During COVID-19 pandemic in Thailand, the hospital administration of medicine in outpatient basis has been affected including biologics. Furthermore, despite of the protective efficacy of COVID-19 vaccinations, their interaction with omalizumab injection must be considered.

Material and methods

We retrospectively review the severe asthma patient profiles in Ramathibodi Hospital from 2021 to 2022. Asthma comorbidities, dose, and duration of omalizumab were reviewed. The type and schedule of COVID-19 vaccination as well as adverse effects were recorded.

Results

There are 14 severe asthmatic patients receiving omalizumab were reviewed. The female were 11 cases. Mean age was 57.8 years. The commonest asthma comorbidities were allergic rhino conjunctivitis (5/14) and chronic urticaria (3/14) and nasal polyposis (1/14).

The mean IgE was 270 IU/ml. The seropositivity of allergen was noted in 43% of patients. Skin prick test was noted in 36% of patients. The mean omalizumab dose was 219.2 mg/month (150-300 mg/month). The duration of injection was every 4 weeks.

The most common COVID-19 vaccine administration was ChAdOx1 (Astra) (6/14), mRNA vaccine (6/14) and Sinopharm & Sinovac vaccine (5/14). Total 14 cases received two doses of COVID-19 regardless of vaccine types. The 8 and 2 cases received three and four vaccinations during data collection.

The rash and worsening of urticaria were noted as vaccine adverse effects. There is no reschedule of omalizumab injection according to COVID-19 vaccine in our series.

Table The omalizumab injected patient characteristics

#	Age	Gender	Diseases		Dose	Q	Total IgE	SPT	slgE	Covid vaccine				Vaccine AE
										1st	2nd	3rd	4th	
1	63	F	Asthma	AR	150	4	180	Pos	None	AZ	AZ	MN		None
2	72	M	Asthma		150	4	62	None	Neg	AZ	AZ	MN		None
3	58	F	Asthma	AR	300	4	814	None	None	AZ	AZ			None
4	84	F	Asthma	NP	150	4	294	Pos	None	AZ	AZ			None
5	79	F	Asthma		150	4	67.2	None	Neg	AZ	AZ	PZ		Active disease
6	35	F	AR	CSU	300	4		None	Neg	SP	SP			None
7	63	F	Asthma	AR	300	4	67.4	Neg	Neg	AZ	MN			None
8	51	F	Asthma	AR	150	>4	71	None	Pos	SV	SV	AZ	PZ	None
9	48	F	Asthma		300	4	80.6	Pos	Pos	SP	SP	MN		RASH
10	30	F	AR	CSU	300	4		Pos	none	SV	SV	PZ	PZ	None
11	48	F	AR	CSU	150	>4	107	Pos	Pos	AZ	PZ			None
12	69	M	Asthma		300	4	104	None	Pos	AZ	AZ			None
13	64	M	Asthma				1280	None	Pos	AZ	AZ	PZ		None
14	45	F	Asthma	Urticaria	150	>4	119	None	Pos	SP	SP	AZ		Active disease

Conclusions

The omalizumab injection during COVID-19 pandemic is applicable and practical in tertiary care setting of Thailand. The COVID-19 vaccination is safe with the minimal side effects when administered in severe asthma patients receiving omalizumab.