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Severe asthma management during COVID pandemic

We describe the experience of two allergology and pneumology units (Milan and Sestri Levante) in treating severe asthma during Sars CoV2 disease-19 (COVID-19) pandemic. Pandemic deeply modified the daily clinical practice in any hospital all over the world. Routine clinical practice, scheduled visits and periodic evaluations were severely reduced or interrupted to open new departments dedicated to COVID-19 patients to staff them appropriately.[1, 2] Current asthma management relies on inhaled corticosteroids, but some patients with asthma are not well controlled with inhaled steroids alone or in combination with long-acting bronchodilators or leukotriene pathway inhibitors.[1] The field of biologic therapy has grown dramatically in the past two decades, with current availability of several molecules, with two distinct, and highly selective approaches to interfering with the allergic and eosinophilic airway inflammation common to most asthma.[1-6] Our units typically follow 280 patients with asthma, 15 of whom with severe asthma in therapy with biologic agents. Out of the 15 patients, 8 are treated with mepolizumab every 4 weeks, 1 with Omalizumab every 4 weeks and 6 with benralizumab every 8 weeks.

From March 2020 to June 2020, all outpatient clinics in our entire hospitals were closed and only hospitalized patients were admitted. Thus, our specific calendars of biologic therapy administration were at risk of being fully jeopardized. In a period with a sanitary emergency affecting mostly lung function, our aim was to not discontinue biologic administration to asthmatic patients to avoid asthma relapses requiring hospitalization or visit to emergency departments, already overcrowded because of the pandemic. In this study we report the results of management of 15 patients with severe asthma treated with biologics. The study was approved by local ethics committee and every patient gave informed consent.

In agreement with our health management offices, we arranged an area in the main entrance of the Hospitals to deliver to our patients the required biologic agents for self-medication or for administration by other medical practitioners according to their expected schedules. To secure compliant use of the drugs, on top of the verbal and written directions communicated at the time of drug delivery, instructions were given through videocall during drug administration, either to the patients or to their practitioners.

Pulmonary function tests (PFTs) were forbidden during pandemic emergency because of the risk of disseminating viral particles with higher risk of infection for patients and staff. Thus, the monthly clinical evaluation was made only by oral interview. PFTs were performed at pre-pandemic and after six months follow up.

We successfully maintained a satisfactory therapy schedule, with an average delay in therapy administration of 10±2 days. Therapy adherence was achieved in 14 patients out of 15 (93%): one subject could not be treated because he declined presenting to the hospital, in fear of the potential risk of infection. During the period, no flares were observed. None of the subjects presented any symptom suggestive for COVID-19, nor was tested positive to the virus. Monthly interviews did not detect any potential issue nor any variation from the subject's clinical status, and Asthma Control Test remained stable at the pre-pandemic values throughout the period for all subjects. As soon as the outpatient clinics were reopened and we could visit the patients, we measured their forced expiratory volume in one second (FEV_1), comparing their values between the last pre-pandemic

TABLE I.—*Forced expiratory volume in one second (FEV_1 liters and $FEV_{1\%}$) in patients at the last pre-pandemic assessment and six months afterward.*

Patient (sex)	Age	February 2020		September 2020	
		FEV_1 (L)	FEV_1 (%)	FEV_1 (L)	FEV_1 (%)
M	50	2.77	72	3.42	89
F	70	1.66	77	1.82	85
M	73	1.23	46	1.84	69
M	62	1.98	63	2.59	83
M	62	1.94	56	2.81	81
M	82	1.83	57	2.67	83
M	62	1.66	55	2.55	84
F	73	2.20	67	2.62	80
F	65	0.93	45	1.31	64
F	48	1.32	57	1.70	73
F	74	1.92	66	2.80	96
F	52	1.23	74	1.44	86
M	79	1.85	49	2.68	71
F	72	1.37	58	1.80	76

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value and the value 6 months afterward. Results are reported in Table I.

Despite currently available epidemiologic data suggest that asthma doesn't represent a risk factor for COVID 19[7-9] at the time we organized our strategy such an information was not known. Nonetheless, patients elected to biological therapy have a medical history of frequent flares, often with hospitalization, and need to take oral corticosteroids as an independent cause for health care utilizations. Thanks to described strategy, we could follow them, limit drug drop-outs, and avoid flares, thus prevent hospital admissions. The strategy of delivering the drugs in a non-outpatient environment with appropriate safety measures allowed us to control viral infection risks, while our hospitals were converted into a COVID clinic. Emergency management of these drugs through a semi self-administered approach, with the support of telemedicine and/or practitioners, proved feasible, effective, and efficient. Thanks to the results we observed during these months, and in selected cases, it seems reasonable to repeat a similar experience even after the present emergency times will be over, particularly considering the availability of new biologic agents with auto-injectors.

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Study of *Pseudomonas aeruginosa* quorum-sensing signaling molecule N-3oxododecanoyl homoserine lactone suppresses human monocyte-derived dendritic cell maturation through PPARγ

Pseudomonas aeruginosa (PA), an opportunistic pathogen, is the leading cause of hospital infection. This versatile bacterium is a major cause of pneumonia in immunocompromised and cystic fibrosis (CF) patients, in whom chronic PA infections is the most common reason for death of these patients. PA can induce immune escape by interacting with immune cells and regulate the activity of host cells. Among host immune cells, DCs are professional antigen-presenting cells that play key roles in both innate and adaptive immunity.[1] Moreover, DCs can sense pathogen-inherent signals and play a pivotal role in polarizing Th cell differentiation, and then determine the outcome of immune response. Our previous studies have indicated that the signaling molecules

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