

Characteristics Of Hospitalized Covid 19 Patients Treated With Non Invasive Ventilation (NIV) During First And Second Pandemic Waves at Varese Hospital.



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Background During the first wave of coronavirus pandemic, the population was not prepared to accomplish the restrictive measures and social distancing and the diagnostic process was based on clinical symptoms. As the pandemic continues these limiting measures were extended but the clinicians increased the use of efficient diagnostic tools. Moreover, the hospital admission versus at home treatment was incorporated into a clinical organized system tool. The aim of our study is to show how this development in hospital referral has impacted in patient characteristics admitted to our hospital between first and second wave.

Methods We performed a cohort study collecting the data from medical data room of the of the patients admitted to our Hospital (Ospedale di Circolo, VARESE, Italy) with a diagnosis of severe Sars-CoV-2 pneumonia needed to NIV (Helmet CPAP or HFNO) during the first (from 24 February to 9 June 2020) and second (from 15 October 2020 and 31 January 2021) pandemic wave. Additionally, we explored the differences of the patients comorbidities and the duration of NIV between these two pandemic period.

Results Our results are showed in table 1 and 2.

	First Wave (n = 163)	Second Wave (n =471)	p-value
Age - median	71 years	72 years	0,18
Over 70 years	78 (47,8%)	264 (56,1%)	0,07
Male	103 (63%)	352 (75%)	1
Female	60 (37%)	119(25%)	1
Comorbidity	First Wave	Second Wave	p-value
none	15 (9,2%)	94 (19,96%)	0,07
1	32 (19,63%)	120 (25,47%)	0,23
2	27 (16,56%)	98 (20,81%)	0,14
3	29 (17,79%)	74 (15,71%)	1
>3	60 (36,81%)	85 (18,04%)	1

Table 1: Patient demographical characteristics during first and second wave and number of comorbidities

Comorbidity	First Wave (n = 163)	Second Wave (n =471)	p-value
Hypertension	86 (52,7%)	288 (61,1)	0,06
Obesity	45 (27,6%)	113 (24%)	0,36
COPD	17 (10,4%)	70 (14,8%)	0,15
Diabetes	27 (16,5%)	117 (24,8%)	0,029
Active or Previous Smoking	44 (27 %)	90 (19,1%)	0,03
Cardiovascular Disease	33 (20,2%)	140 (29,7%)	0,02
Asthma	6 (3,7%)	15 (3,2%)	0,76
Chronic kidney disease	13 (7,9%)	68 (14,4%)	0,33
OSAS	4 (2,4%)	33 (7%)	0,03
Neurological Disease	17 (10,4%)	37 (7,8%)	0,31
Haematological disorders	11 (6,7%)	28 (5,9 %)	0,13
Autoimmune Disease	6 (3,7%)	34 (7,2%)	0,11
Infectious Disease	3 (1,8%)	12 (2,5%)	0,61

Table 2: Comorbidities (percentage of patient affected) of the patients during first and second wave

Discussion: The NIV success depends on several factors including the type and severity of acute respiratory failure but its use is essential into the battle against Covid 19. However, the pandemic evolution and its clinical impact in term of patients characteristics admitted into hospitals revealed that the people with common comorbidities needed hospitalization and the health policies have to consider this data. We registered none improvement of health treatment at home during these two pandemic wave. In our opinion this data could be explained due to lack of vaccines that have been revealed the strongest weapon in pandemic era. Further analysis could be directed to comparison of pre vaccines waves to waves during vaccination campaign.