

## Study Of 215 Patients Who Required High Flow Nasal Cannula During Corona Virus Epidemic

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**Abstract:** Background: High flow nasal cannula is a newer modality of treatment for hypoxemic respiratory failure. Present study is conducted to evaluate demographic characteristics, co-morbidities and outcome parameters of patients on High flow nasal cannula. Material And Methods: In retrospective observational study all patients on High flow nasal cannula with covid-19 were evaluated for demographic characteristics and outcome with comorbidities during study period. Result: Maximum number of patients belongs to age group 51-60 years. Highest mortality was in the age group of 61-70 years. Conclusion: The High flow nasal cannula therapy may provide important newer modality and helpful in patients with respiratory failure. [Shah V Natl J Integr Res Med, 2022; 13(1): 61-63, Published on 26/01/2022]

**Key Words:** High Flow Nasal Cannula Therapy, Acute Respiratory Failure, Co-Morbidities

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**Introduction:** In the real pandemic times the newer modality called high flow nasal cannula (HFNC) has helped us a lot to retrieve the patient to good health from respiratory failure. It has come up as a new modality to support the oxygen demands of the patients. As well it has also helped to restore the adequate need of oxygenating the patient, also avoided the high level of care and disadvantages of Bi-pap and delayed the intubation time to some extent. The comfort provided by the high flow nasal cannula oxygen was significant and helped to relieve the anxiety and stress of the patients. It has wide range for providing the oxygen to the patients which includes 10 litres per minute to 60 litres per minute.

**Material & Methods:** All patients of Covid 19 disease requiring high flow nasal oxygen cannula during their hospital stay from January 1<sup>st</sup> 2021 to 30<sup>th</sup> June 2021 were enrolled in this study. Data of these patients regarding demographic profile, co-morbidity and outcome from hospital information system was enrolled in as case record form was analyzed by appropriate statistical software.

**Results:** The total of 215 patients was studied, who were given the High flow nasal cannula therapy Out of total majority of the patients 66 (30.7%) are from 51-60 years age group.

**Table 1: Age Wise Distribution**

Age	Count	%
0-10	0	0.0%
11-20	0	0.0%
21-30	0	0.0%
31-40	25	11.6%
41-50	33	15.3%
51-60	66	30.7%
61-70	43	20.0%
71-80	43	20.0%
81-90	5	2.3%
>90	0	0.0%
Total	215	100.0%

Total 215 patients were taken for the studies. 160 (74.4%) out of 215 were male and 55 (25.6%) out of them were female. All were subjected to the high flow nasal cannula support.

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**Table 2: Age And Sex Wise Distribution**

Age	Male	%	Female	%
0-10	0	0.0%	0	0.0%
11-20	0	0.0%	0	0.0%
21-30	0	0.0%	0	0.0%
31-40	20	9.3%	5	2.3%
41-50	25	11.6%	8	3.7%
51-60	46	21.4%	20	9.3%
61-70	35	16.3%	8	3.7%
71-80	34	15.8%	9	4.2%
81-90	0	0.0%	5	2.3%
>90	0	0.0%	0	0.0%
Total	160	74.4%	55	25.6%

The co-morbidities these patients were having were hypertension, diabetes, chronic kidney

diseases, ischemic heart disease, chronic obstructive pulmonary disease etc.

**Table 3: Comorbidity Wise Distribution**

Age	Comorbidity					%				
	0	1	2	3	4	0	1	2	3	4
0-10	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
11-20	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
21-30	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
31-40	21	4	0	0	0	9.8%	1.9%	0.0%	0.0%	0.0%
41-50	30	3	0	0	0	14.0%	1.4%	0.0%	0.0%	0.0%
51-60	38	19	6	3	0	17.7%	8.8%	2.8%	1.4%	0.0%
61-70	9	10	15	9	0	4.2%	4.7%	7.0%	4.2%	0.0%
71-80	22	17	1	3	0	10.2%	7.9%	0.5%	1.4%	0.0%
81-90	0	0	0	5	0	0.0%	0.0%	0.0%	2.3%	0.0%
>90	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
Total	120	53	22	20	0	55.8%	24.7%	10.2%	9.3%	0.0%

The highest comorbid conditions were examined in 61-70 years age group. Out of 215 patients 27 (12.6%) patients were expired and 188 (87.4%)

patients were discharged successfully form the hospital.

**Table 4: Outcome Wise Distribution**

Age	Discharge	%	Expired	0
0-10	0	0.0%	0	0.0%
11-20	0	0.0%	0	0.0%
21-30	0	0.0%	0	0.0%
31-40	25	11.6%	0	0.0%
41-50	33	15.3%	0	0.0%
51-60	58	27.0%	8	3.7%
61-70	32	14.9%	11	5.1%
71-80	40	18.6%	3	1.4%
81-90	0	0.0%	5	2.3%
>90	0	0.0%	0	0.0%
Total	188	87.4%	27	12.6%

The expired patients were analysed for the number of co morbid conditions Out of patients 20 with 3 comorbidities 8(40%) expired, out of 22

patients with 2 comorbidities 6 (27.2%) expired Out of 53 patients with 1 comorbidity 13(24.52%) expired. The patients without any comorbidities

did have very good clinical course and all of them recovered and discharged successfully. Patients with 3 comorbidities had highest mortality.

Out of patients 58 with age group 51-60 years, 8(13.7%) expired. Out of patients 32 with age group 61-70 years, 11(34.3%) expired. Out of patients 40 with age group 71-80 years, 3(7.5%) expired. All patients with age group > 80 years expired.

**Table 5: Co Morbidity And HFNO Requirement In Expired Patient**

Expired		
Comorbidity	HFNO	%
0	0	0.0%
1	13	48.1%
2	6	22.2%
3	8	29.6%
Total	27	100.0%

**Discussion:** The study suggests that the high flow nasal cannula is a useful new modality to be used for the patients having respiratory failure. It has found to be more useful device and having less side effects like drying of throat. Studies also have suggested that the High flow nasal cannula therapy can increase the oxygen level & also helps in intubation related hypoxia<sup>7</sup>. High flow nasal cannula may be an effective modality for the treatment of hypoxic respiratory failure. High flow nasal cannula therapy is very good modality for the hypoxic patients<sup>1</sup>.

It has shown good outcomes including comfort of the patient and also has good physiological effects<sup>2</sup>. Several studies have also shown that the High flow nasal cannula therapy can be used as a first line of therapy for patients with respiratory failure<sup>3</sup>. There are several studies also shows the benefits in some cases having hypercarbia<sup>4,5,6</sup>.

In present study no patient with age < 30 years required HFNC and there was no mortality in patients with age less than 51 years indicating better prognosis in young patients when treated with HFNC. Mortality was highest in patients with age more than 80 years; study also shows that there is increase percentage of mortality with increasing number of co-morbidities.

**Conclusion:** HFNC may be a newer modality of treatment for hypoxemic respiratory failure

however results may not be good with advanced age and increasing number of co-morbidities.

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