CONSCIOUS PRONE POSITIONING OF PATIENTS WITH COVID-19 PNEUMONITIS: AN AUDIT OF PRACTICE IN THE NORTH WEST OF ENGLAND

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CONTEXT, AIMS AND METHODS:

In April 2020, the Intensive Care Society (ICS) issued guidance for conscious prone positioning of patients presenting respiratory failure secondary to COVID-19 (1).

The objective of the study was to assess the practice of CPP and the compliance to ICS guidance in the North West of England. We also aimed to evaluate the feasibility of proning and to appraise the impact of position changes on oxygenation. The study was also an opportunity to encourage multidisciplinary teams to consider CPP as a therapeutic tool for patients admitted with COVID-19 pneumonitis in non-critical care areas.

This was a pragmatic observational prospective cohort study conducted over five weeks in May and June 2020 across seven different hospitals (fig. 1) in the North West of England. We attempted to capture as many episodes of CPP as possible during this period. We followed up the patients for 28 days from their first episode of CPP. A descriptive statistical analysis was performed using Excel.

Table 1: Patients characteristics

Patients characteristics	n (%) or mean ± SD or median (IQR)
Age	65.8 ± 14.7
LOS	8 (5, 19)
Number of CPP episodes per patient	2 (1, 3)
PMH	
. Respiratory disease	32 (29.9)
. HTN	50 (46.7)
. Diabetes	25 (23.4)
. Cardiovascular disease	37 (34.6)
X Ray changes	
. Bilateral widespread changes	52 (48.6)
. Focal consolidations	27 (25.2)
. Normal	2 (1.9)
Ceiling of care	
. No ceiling of care	59 (55.1)
. CPAP/NIV	26 (24.3)
. O2 therapy only	21 (19.6)
COVID 19 status at time of proning	
. Positive	80 (74.8)
. Negative	20 (18.7)
28 days mortality	
. Death	42 (39.3)
. Survival	60 (56.1)
28 days Mortality among patients with no ceiling of care (n=59)	
. Death	6 (10.2)
. Survival	48 (81.3)
28 days Mortality among patients with ceiling of care (n=47)	
. Death	36 (76.6)
. Survival	11 (23.4)
Patients intubated	15 (25.4% of patients with no ceiling of care)
Number of total hours of CPP per patient	3.25 (1, 6.3)

Table 2: Characteristics of CPP therapies

CPP characteristics (n = 246)	n (%) or mean ± SD or median (IQR)
Location	
. A&E	3 (1.2)
. Medical ward	105 (42.7)
. Resp ward	55 (22.4)
. Critical Care	82 (33.3)
Duration of CPP (hours)	4 (2, 8)
CPP discontinued prematurely	48 (19.5)
. Discomfort/Pain	28 (11.4)
. Clinical deterioration	14 (5.7)
. Vomiting	1 (0.4)
. Other	5 (2)
Leading team	
. Physiotherapist	88 (35.8)
. Nursing staff	53 (21.5)
. Medical team	10 (4)
. Patient	89 (36.2)
Patient able to self position	
. Yes	180 (73.2)
. No	56 (22.8)
CPAP used	93 (37.8)

RESULTS:

Overall, 107 patients were included, of which 55% were candidates for escalation to level 3 care. Among these patients 25% were eventually intubated. Table 1 shows more patients characteristics. A total of 246 episodes of CPP were recorded. Table 2 provides details about CPP episodes. The median duration was 4 hours. Proning was often conducted by patients and physiotherapists, as didn't need assistance. One fifth of the CPP had to be discontinued, mostly because of discomfort. We focused on the first episode to assess practicalities and effect on oxygenation (table 3). Only 9% of episodes were reported to follow ICS. Thirteen per cent of CPP were initiated in morbidly obese patients despite it being mentioned as a relative contraindication. In terms of oxygenation, desaturation occurred within the first 15 minutes in 21% of cases. There was a tendency to improvement of FiO2 and SF ratio after 24 hours of the first CPP. .

CONCLUSION:

In summary, a pragmatic approach often dictated departure from ICS guidance. Although CPP was largely feasible, it had to be adapted in most cases to the patients, their environment, the logistics, and their ventilatory support. It was often self-administered and didn't seem to be limited by morbid obesity for example. While the results and experience suggest a positive impact of CPP on oxygenation, only a well-designed comparative trial could determine the role of position changing in preventing intubation or death.

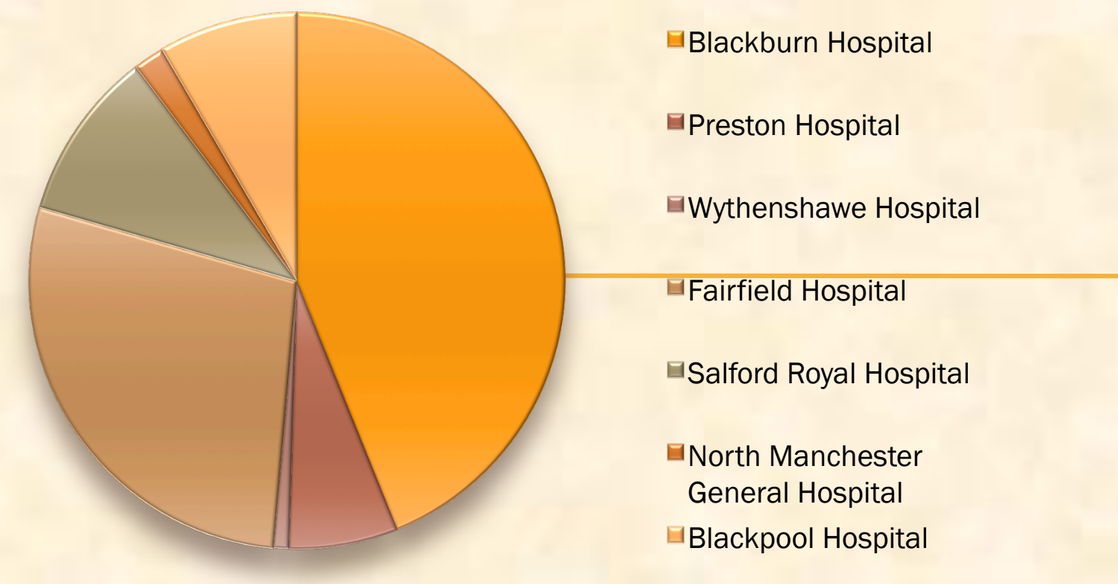

Figure 1: Distribution of recruited patients across different hospitals

Table 3: Characteristics and impact of first CPP

First CPP characteristics (n=107)	n (%) or mean ± SD or median (IQR)
FiO2	
. pre proning	0.52 ± 0.24
. post proning	0.44 ± 0.22
S/F ratio	
. pre proning	211.3 ± 93.7
. 24 hours post initiation of proning	258 ± 108.4
Duration of CPP (hours)	2 (0.85, 6)
Desaturation within first 15 min	23 (21.5)
CPP discontinued prematurely	30 (28)
. Discomfort/Pain	15 (14)
. Clinical deterioration	11 (10.3)
Patient able to self position	
. Yes	71 (66.4)
. No	31 (29)
Protocol	
. ICS	10 (9.3)
. Local	61 (57)
. Tailored to patient	34 (31.8)
CPAP used	30 (28)

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