



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

changes are more likely to be marked in this patient group due to the wide use of targeted temperature therapy (cooling) between days 1-3. The results produced would indicate that it is necessary to change energy provision particularly after day 7 of admission. In addition, it provides evidence of the inability of weight-based energy equations to accurately predict energy expenditure, increasing the risk of over or under feeding. Research involving larger patient numbers with different clinical conditions is required to ascertain if this pattern is consistent with other critically ill patient groups.

#### References:

1. McClave S, Taylor B, Martindale R. Guidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patient: Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.). *Journal of Parenteral and Enteral Nutrition*. 2016; 40(2): 159-211. Available from: DOI [Accessed 2<sup>nd</sup> June 2019].
2. Singer P, Blaser A, Berger M. ESPEN guideline on clinical nutrition in the intensive care unit. *Clinical Nutrition*. 2018; 38(1): 48-79. Available from: DOI10.1016/j.clnu.2018.08.037 [Accessed 2<sup>nd</sup> June 2019].

### COVID-19 MANAGEMENT IN A UK TERTIARY CENTRE WITH HIGH CONSEQUENCE INFECTIOUS DISEASES CENTRE: NUTRITIONAL STATUS, INTERVENTION AND OUTCOME

C. Lorden<sup>1</sup>, S. Welsh<sup>2</sup>, B. Puvaneswaran<sup>2</sup>, S. Gandhi<sup>3</sup>, K.F. Baker<sup>4,5</sup>, C. Duncan<sup>2,5</sup>, C. Mountford<sup>1</sup>. <sup>1</sup>Dept of Gastroenterology, Newcastle Hospitals NHSFT; <sup>2</sup>Dept of Infectious Diseases, Newcastle Hospitals NHSFT; <sup>3</sup>Dept of Dietetics, Newcastle Hospitals NHSFT NE7 7DN; <sup>4</sup>Department of Rheumatology, Newcastle Hospitals NHSFT; <sup>5</sup>Translational and Clinical Research Institute, Newcastle University

Coronavirus disease 2019 (COVID-19) has rapidly spread across the globe. Elderly individuals and patients with comorbidities such as obesity, diabetes, and hypertension have been shown to have a higher risk of hospitalization, severe disease, and mortality.<sup>1</sup> To date, little data has been published on the timely identification and correction of undernutrition in patients hospitalised with COVID-19.

We previously reported a retrospective analysis of the management and 28-day outcomes of 316 consecutive adult patients with SARS-CoV-2 PCR-confirmed COVID-19 admitted to our centre, within the first wave of the pandemic between 8<sup>th</sup> January 2020 and 16<sup>th</sup> April 2020.<sup>2</sup> The study was registered as a clinical service evaluation and was exempt from ethical approval. A total of 316 patients (55% male) were identified with a median (IQR) [range] age of 75 (60 – 83) [23 – 101] years. Twenty-seven of 316 (9%) patients were healthcare workers, and 60 (19%) were admitted from a care home. The median (IQR) duration of admission was 8 (4 – 14) days, and 59 (19%) patients were admitted to critical care. In total, 84 (27%) patients died within 28 days of admission (or before discharge where admission duration >28 days).

We here present further hitherto unpublished analyses of the nutritional status, intervention and outcomes of this cohort. Gastrointestinal symptoms present at admission were: anorexia (97 [31%]), diarrhoea (64 [20%]), vomiting (43 [14%]) and abdominal pain (33 [10%]). Admission weight was recorded in 151 (48%) patients, with a median [range] 74.5kg [32.4-168.0]. Where measured (62 [20%] patients), there was significant weight loss observed during admission; median (IQR) weight 77.4kg (65.5-96) at admission and 73.7kg (61.4-94.5) last recorded weight on admission ( $P=0.0001$ , paired Wilcoxon signed-rank test). Forty-eight (15%) patients were assessed by a dietician during their admission. Fifty-three (17%) patients received oral nutritional supplements whilst an inpatient and 38 (12%) received enteral feeding. Of those patients receiving enteral feeding, 30 (79%) had tube placement confirmed by chest x-ray.

In conclusion, gastrointestinal symptoms that are commonly associated with reduced nutritional intake were common in these patients hospitalised with COVID-19. There was evidence of reduced nutritional screening on admission compared with pre-COVID practice. This may have been associated with barriers associated with initial infection prevention and control requirements as well as focus on respiratory issues, and should be addressed in future waves of infection. Updated safety advice on enteral tube feeding including confirmation of tube placement was followed in the

majority of cases.<sup>3</sup> Future studies should aim to better establish the particular circumstances in COVID-19 where nutritional support impacts outcome.

1. Wu Z, McGoogan JM. Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention 2020 Apr 7;323(13):1239-1242.
2. Baker KF, Hanrath AT, Schim van der Loeff I, Tee SA, Capstick R, Marchitelli G, Li A, Barr A, Eid A, Ahmed S, Bajwa D, Mohammed O, Alderson N, Lendrem C, Lendrem DW, COVID-19 Control Group, COVID-19 Clinical Group, Pareja-Cebrian L, Welch A, Field J, Payne BAI, Taha Y, Price DA, Gibbins C, Schmid ML, Hunter E, Duncan CJA. COVID-19 Management in a UK NHS Foundation Trust with a High Consequence Infectious Diseases Centre: A Retrospective Analysis. *Med Sci* (2021); 9(1):6.
3. Nasogastric tube safety Special Interest Group. May 2020. Enteral tube feeding safety in COVID-19 patients. BAPEN. [COVID-19 Resources, Statements & Guidelines | HPN Management \(bapen.org.uk\)](https://www.bapen.org.uk/resources/statements-guidelines-hpn-management)

### FEASIBILITY AND EFFECTIVENESS OF A MULTIMODAL HOSPITAL BASED ONCOLOGY PREHABILITATION SERVICE

A. Petrova, A. Labey. North Middlesex University Hospital, London, N18 1QX

Prehabilitation (prehab) is considered part of the cancer rehabilitation pathway and aims to enable patients with cancer diagnosis to improve their functional baseline through a multimodal approach<sup>(1)</sup>. There is currently no structured prehab at our trust.

We aimed to assess the feasibility and effectiveness of a multimodal hospital based prehab service for colorectal oncology surgical patients.

We developed a hospital based multimodal prehab service aimed at patients with a diagnosis of colorectal cancer undergoing surgery. Potential patients were identified at MDT and referred from surgical clinic at time of consent to surgery. Initial assessment was booked into a multimodal assessment clinic (dietitian and exercise physiologist) within 7 days of referral. Initial assessment included nutritional risk assessment using patient generated subjective global assessment (PG-SGA), body composition assessment using a Tanita body composition analyser and a review of patients' past medical history for comorbidities requiring dietetic input. Physical assessment included: hand grip strength (HGS), 1-minute sit to stand (1MSTS), Duke Activity Status Index (DASI) and suitable patients were referred for a cardio-pulmonary exercise test (CPET). Quality of life (QoL) was assessed using a validated questionnaire (EQ-5D-5L). Patients were stratified into universal, targeted and specialist categories depending on the level of support required<sup>(1)</sup>. Exercise diaries and heart rate (HR) watches were used to monitor patients' compliance at home. Individual target HR zones during exercise were provided by the exercise physiologist. Patients were given a paper exercise programme, online video exercises<sup>(2)</sup> and/or general advice to increase own activity levels depending on the individual needs and preference. Individual dietetic advice was given to all patients based on the outcome of the initial assessment. All patients were reviewed weekly face to face by one or more members of the team depending on the input required for exercise and nutrition respectively. Data was reviewed for the first 3 months of the service.

Fourteen patients were referred to the service. At the time of review 6 (43%) had completed the prehab programme. From the remaining patients, 3 (21%) proceeded with neo-adjuvant chemotherapy prior to reassessment, 1 (7%) was not re-assessed due to poor compliance; and 4 (29%) were in the middle of the programme. Out of the assessed patients: 4 (66%) were on the universal pathway for both exercise and nutrition, 1 (17%) - specialist for exercise and targeted for nutrition and 1 (17%) - specialist for both. Outcomes were assessed as average change: weight +0.53kg (-0.7 - +2.6); %FFM (fat free mass) +1.1% (-1 - +2.9%); HGS +3.05kg (+0.4 - +7.8kg), 1MSTS +12 (+4 - +22), EQ 5D 5L Visual analogue scale +21% (+5 - +35%), EQ5D5L: all (100%) patients scored as improved health (health was reported better on at least one dimension and no worse in any other dimensions). The average length of prehab was 4 weeks (minimum 2, maximum 7).

Our results suggest that a multimodal prehab service in the hospital setting is feasible with potential benefit on multiple outcomes including weight maintenance, improvement in physical function and QoL markers.