Should we be paying more attention to the nutritional status of COVID and long COVID patients?

In December 2020, NICE published a COVID-19 rapid guideline on managing the long-term effects of COVID-19. However, despite the fact that the current pandemic has highlighted the importance of nutritional status in maintaining good health, nutrition support does not feature in this guidance.

Many of the signs and symptoms noted to frequently persist after acute COVID-19 infection, such as breathlessness, fatigue, loss of smell and taste and inflammation, can impact oral intake and potentially worsen nutritional status.[1-5]

The nutritional consequences of COVID-19 are not yet fully understood but knowledge from acute respiratory distress syndrome suggests that patients are likely to experience skeletal muscle dysfunction, which can persist for weeks to years.[6] Initial recent research has found a very high incidence of weight loss and risk of malnutrition among COVID-19 survivors, independent of hospitalisation,[7] and sarcopenia (loss of muscle mass and function) has been found to occur in survivors of COVID-19; with older adults and the most critically unwell patients being the most at risk.[8]

Low muscle mass negatively affects patient outcomes and increases healthcare utilisation. It is associated with higher rates of infections, poorer tolerance to chemotherapy, hospitalisation, fractures, reduced quality of life, and reduced survival.[9] For those with pre-existing conditions (including poor cardiometabolic health) who have had severe COVID-19, and in some cases long COVID, a tailored nutritional approach is likely to be required.

"Whilst more research needs to be done into recovery from COVID and long COVID, from what we know in relation to other long-term illnesses, diet and resistance training are likely to play an important role in assisting in recovery," says Anne Holdoway, Consultant Dietitian, Chair of the Malnutrition Pathway panel and Chair of the British Dietetic Association COVID-19 Clinical Guidance Group. *"Amongst those with pre-existing conditions, determining the optimum diet can be complex. Registered dietitians possess the skills to assess nutritional status, oral intake, social status and concurrent medical conditions and can provide an individual with meaningful and appropriate advice to not only optimise recovery but manage underlying conditions and weight, to optimise long-term health through dietary change."*

Obesity may mask malnutrition

Obesity is common in COVID-19 patients and has been shown to increase the risk for hospitalisation and poorer outcomes,[10] however, obesity may mask malnutrition and muscle loss in COVID-19 patients.

Individuals who are obese, or have comorbidities including type 2 diabetes and heart disease, may experience significant weight loss during acute infection, of which a large proportion may be muscle mass.[7] This is supported by evidence that a large proportion of patients describe ongoing muscle weakness following COVID-19 infection, as well as an increase in care dependency and frailty scores.[11, 12] While appetite may return to normal after acute infection, inadequate protein intakes and reduced mobility (due to persistent fatigue or breathlessness for example) may hamper recovery and the return to pre-illness function. In those who are overweight or obese, once acute infection has passed and appetite improved, a high calorie diet may exacerbate pre-existing conditions. Hence a focus on protein, ideas on achieving a balanced diet when fatigued and the role of resistance activity should be emphasised to optimise muscle mass and strength.

"We know that obesity increases the risk of severe illness and death from COVID-19 and in patients with severe COVID infection who have rapid weight loss, healthcare professionals should be alert to the likelihood of loss in muscle mass (malnutrition) rather than fat mass in some of their patients during the early post hospital period," says Dr Anita Nathan, GP, Malnutrition Pathway panel member. *"It is important that messages relating to increased protein intake in combination with exercise are given to these patients to ensure they recover muscle loss."*

Nutritional strategies

Implementing nutritional management strategies is recognised as being crucial for hospitalised patients, particularly those in the ICU or with older age and multi-morbidities.[13] However, recent research suggests that individuals managing or recovering from COVID-19 symptoms at home should receive counselling on how to maintain an adequate intake of calories, protein, and fluids.[7] It is suggested that strategies such as using remote nutritional screening tools recently developed for primary practice should be implemented to improve the nutritional management of patients managed at home.[7]

"Where patients may be at risk of malnutrition, for example, in vulnerable groups such as people with long-term health conditions, or those with learning disabilities, we would like to encourage community-based healthcare professionals to carry out malnutrition screening following COVID-19 infection," says Liz Anderson, Lead Nurse for Nutrition and Malnutrition Pathway panel member. *"This is particularly important where patients are experiencing persisting symptoms that may affect their nutritional status."*

Information on screening remotely can be found at: www.bapen.org.uk/pdfs/covid-19/covid-mag-update-may-2020.pdf. Patients can also be encouraged to self-screen: www.malnutritionselfscreening.org.

For individuals who are underweight or continuing to lose weight following COVID-19 infection, nutrition support in the form of a high energy, high protein diet is indicated, and oral nutritional supplements may be required if patients are unable to increase their intake through diet alone.[14]

To support community healthcare professionals in the management of patients who have COVID-19 or are recovering from infection, the Malnutrition Pathway has developed 'A Community Healthcare Professional Guide to the Nutritional Management of Patients During and After COVID-19 Illness' (www.malnutritionpathway.co.uk/library/covid19_hcpguide.pdf). This includes a COVID-19 specific nutrition care pathway and advice on screening for malnutrition via remote consultations. The website also features information leaflets designed to help provide appropriate nutritional guidance to patients at low, medium or high risk of malnutrition along with a resource finder to assist professionals and patients in identifying the correct advice according to the nutritional status of the patient (www.malnutritionpathway.co.uk/covid19). The leaflets include tips on coping with symptoms related to COVID-19 illness and encouraging activity combined with good nutrition. For patients who are not at risk of malnutrition but may have lost muscle mass and strength due to COVID-19 infection and ongoing symptoms, advice should focus on ensuring adequate protein in the diet and increasing physical activity.

"NHS Trusts across the UK are using these resources as part of their discharge packs for COVID-19 patients – in the first two months of 2021 alone, nearly 10,000 copies of the COVID-19 and nutrition patients leaflets were downloaded from the malnutrition pathway website," says Anne Holdoway, *"With an increasing number of patients now suffering from the longer term effects of COVID-19 we hope that these resources will assist community healthcare professionals in advising patients on the role nutrition can play in aiding their recovery."*

A separate guide has been developed for care homes to assist care home staff in the nutritional care of patients who have or are recovering from COVID-19 illness: www.malnutritionpathway.co.uk/library/carehome_nutrition_covid19.pdf.

Additional fact sheets on incorporating protein into the diet for both healthcare professionals and patients are also available at: www.malnutritionpathway.co.uk/proteinfoods.

NB: More detailed support on complex conditions should be sought from a registered dietitian.

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