NOVEMBER 24, 2022

RESEARCH SUMMARIES

fraserhealth

How do malnutrition and sarcopenia risk influence intensive care unit outcomes in patients with an elevated body mass index? A feasibility study

Author: Courtney Wedemire
Registered Dietitian, Critical Care – Intensive Care Unit and High Acuity Unit, Abbotsford Regional Hospital

WHY WAS THIS RESEARCH DONE?

Malnutrition and sarcopenia (low amounts of muscle and muscle strength) may increase the risk of a patient not surviving in the intensive care unit (ICU) or needing to stay on life support and in the ICU longer. Life support in these studies is requiring breathing support with a mechanical ventilator. Patients with a higher body mass index (BMI) may have a greater chance of survival but may also need a longer duration of life support and stay in the ICU longer. Only one previous study has explored malnutrition in patients with a higher BMI and if it influences ICU outcomes. This study found that malnutrition resulted in worse outcomes and suggests that research on patients with a higher BMI admitted to ICU needs to consider malnutrition. Sarcopenia has not previously been researched in ICU patients with a higher BMI. Sarcopenia can co-exist with malnutrition because malnutrition can result in low amounts of muscle and strength.

WHAT DID THE RESEARCHERS DO?

This research study asked if it would be possible and how long it would take to recruit patients with a higher BMI and if there were any survival or length of life support trends among patients who had malnutrition risk, sarcopenia risk, or both. This information allows for a larger study to be designed and informs how health care providers could use malnutrition and sarcopenia screening in the ICU. All patients admitted to the ICU at Abbotsford Regional Hospital were checked to see if they could participate, asked for consent, screened for malnutrition and sarcopenia risk, and followed during their ICU stay.

WHAT YOU NEED TO KNOW

- There is little research that has examined malnutrition and sarcopenia (low muscle amount and muscle strength) in patients with higher BMI and if it influences ICU outcomes
- These findings suggest that the identification of these factors could predict life support, nutrition, and physical therapy needs for patients in the ICU
- Plans for research with a larger sample size are underway

WHAT DID THE RESEARCHERS FIND?

To complete a larger study, patients would have to be recruited over a long time or from multiple ICUs. We faced challenges enrolling patients due to the specificity of the study's eligibility criteria and the challenges with obtaining consent from substitute decision-makers. However, this study found that there were trends toward lower ICU survival and a longer length of life support in patients with both sarcopenia and malnutrition risk. This study highlights the importance of screening for not only malnutrition (which is usual clinical practice) but also screening for sarcopenia and functional decline to better identify patients with a higher BMI who are at a higher risk of poor ICU outcomes.

HOW CAN THE RESEARCH BE USED?

While larger studies still need to be conducted, these findings suggest that early identification of sarcopenia and malnutrition risk may predict patients with a higher BMI that may require a longer duration of life support and have a lower chance of survival. These patients may benefit from tailored nutrition and physical therapy support in ICU and this should be further tested. It also highlights a potential need for malnutrition and sarcopenia risks to be identified and treated in the community before ICU admission. These preliminary results were presented to critical care dietitians in BC and have informed discussions about dietitian assessment practices and how this information would inform patient care from the multidisciplinary team and improve the visibility of nutrition care in intensive care units. A multi-site, prospective, observational study that builds on this study is currently being planned.

This research was funded by a Fraser Health Seed Grant.

Research Summaries is brought to you by:
Fraser Health Research and Evaluation fraserhealth.ca\research. Supporting the development and implementation of health research in the Fraser Health Authority.

The editor of this summary was Alia Januwalla, Knowledge Translation Specialist, BC SUPPORT Unit Fraser Centre. Fraser Centre is jointly administered by Fraser Health DERS and Simon Fraser University.

OUTPUTS

An abstract has been submitted to the American Society for Parenteral and Enteral Nutrition Science and Practice Conference. Plans to disseminate findings at Fraser Health are underway.

To learn more, contact Courtney Wedemire at courtney.wedemire@fraserhealth.ca.