

The Association between Oral Nutritional Supplements and 30-Day Hospital Readmissions of Malnourished Patients at a US Academic Medical Center

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Background

About 30 to 50% of patients admitted to hospitals are malnourished; another 38% of well-nourished patients suffer a decrease in nutritional status during their hospital stay. Hospitalized patients suffering from malnutrition have increased morbidity, mortality, length of stay (LOS), and hospital readmissions, resulting in higher healthcare costs.

Objective

To assess both the use of oral nutritional supplements (ONS) and the association with the number of 30-day unplanned hospital readmissions for adult malnourished inpatients.

Methods

This retrospective cohort study examined 153,161 inpatient encounters at a US academic medical center between October 1, 2016, and September 30, 2017, and identified 8,713 (5.7%) patients “at risk” for malnutrition. All “at risk” patients were subsequently assessed by registered dietitians. Patients who had ONS prescribed during their hospital stays were identified.

Results

Hospital length of stay and readmission

- Malnourished patients had a mean hospital LOS of 8.3 (\pm 10.3) days with a hospital 30-day readmission rate of 37.9%.
- The initiation time for ONS use in hospitalized malnourished patients was more than 3 days (84.6 \pm 140.2 hrs.) with only 3.1% of malnourished patients receiving ONS.
- After controlling for all variables, patients receiving ONS during hospitalization had 38.8% fewer 30-day hospital readmissions than patients not receiving ONS ($p=0.017$). Oncology patients consuming ONS were associated with 46.1% fewer readmissions than patients not receiving ONS ($p<0.001$).

- Timing of ONS initiation was associated with hospital LOS; earlier ONS correlated with shorter LOS. A 50% reduction in time to initiation of the ONS prescription was associated with significant reduction in LOS (10.2% overall, 10.2 % oncology, and 16.2% in intensive care patients, all $p<0.01$).

Patient characteristics and severity of illness

- Patients receiving ONS were significantly older than the non-ONS patients (60.8 years vs 55.6 years, $p<0.001$) with African Americans ($p=0.014$) and females ($p<0.001$) less likely to receive ONS. Sicker patients and those with a hospital-acquired condition were more likely to receive ONS (16.8% vs 8.0%, $p<0.001$). The severity of illness was 3.16 for patients with ONS and 2.73 for patients not receiving ONS ($p<0.001$).
- Significantly more patients receiving ONS resided in a skilled nursing facility prior to admission to the hospital as compared with non-ONS patients (2.6% vs 0.9%, $p=0.006$). More patients receiving ONS had Medicare as their insurance provider vs. non-ONS patients (54.7% vs 41.3%, $p<0.001$).

Conclusion

- Use of ONS by malnourished hospitalized patients was low, but when used, was associated with 38.8% fewer 30-day hospital readmissions; the greatest impact was for oncology patients.
- Earlier initiation of ONS during hospitalization was associated with shorter LOS and should thus be considered for patients admitted to acute care.

The complete study may be accessed at:
<https://pubmed.ncbi.nlm.nih.gov/33054996/>