VITAMIN D DEFICIENCY IN PATIENTS AFTER TOTAL PANCREATECTOMY AND ISLET AUTO-TRANSPLANTATION: EFFECTS ON QUALITY OF LIFE

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ABSTRACT

Pain severity, impaired gastrointestinal function, nutritional risk and additional disease-related complications have a negative impact on quality of life (QoL) in patients with chronic pancreatitis (CP). Chronic pain may decrease after a patient undergoes a total pancreatectomy and islet auto-transplantation (TP-IAT) procedure. Vitamin D (VD) deficiency is associated with inflammation, decreased immune function and depression, all of which affect overall QoL. The purpose of this study was to assess VD status and relationships with QoL measures in a cohort of CP patients who had undergone TP-IAT within the past five years (n=86, 11 males, 75 females). VD levels and QoL measures were assessed before and six months after surgery. Post-surgery morphine use was examined as an objective measure and a pain score questionnaire as a subjective measure of QoL. VD deficiency (VD level <25 ng/mL) was identified in 53% of the cohort (deficient: 14.9±5.47 vs normal: 35.3±9.40 ng/mL, p<0.001). Six months after surgery, VD-deficient patients reported two-fold greater morphine use compared to those with normal levels (39.0±14.11 vs 184.±178.5 mg/d, p<0.015). VD-deficient patients also reported higher average pain scores at six months compared to those with normal levels (p=0.05). It is essential to monitor VD levels in patients undergoing TP-IAT, as those with low levels appear to have poorer QoL due to higher pain levels. RDNs should monitor QoL measures such as pain medication use and subjective pain scores as markers of QoL as part of their functional nutrition assessment.

BACKGROUND & OBJECTIVE

Due to the relatively new status of the total pancreatectomy and islet auto-transplantation (TP-IAT) procedure, data regarding nutritional status in this patient population is limited. Additionally, not many studies have been done that focus on the association between vitamin D status and quality of life (QoL) have. This study was created to look for an association between vitamin D status and quality of life measures in TP-IAT patients. The objective of this study is to create nutrition recommendations and protocol for RDNs to follow, regarding vitamin D supplementation in the TP-IAT patient population.

METHODS

A retrospective chart review was conducted in a cohort of CP patients who had undergone TP-IAT within the past five years (n=86, 67 female; 85% white; 41.1±12.3 y; pre-surgery BMI: 26.3±6.3 kg/m^2). TP-IAT patients with chronic pancreatitis (CP). Chronic pain may decrease after a patient undergoes a total pancreatectomy and islet auto-transplantation (TP-IAT) procedure. Vitamin D (VD) deficiency is associated with inflammation, decreased immune function and depression, all of which affect overall QoL. The purpose of this study was to assess VD status and relationships with QoL measures in a cohort of CP patients who had undergone TP-IAT within the past five years (n=86, 11 males, 75 females). VD levels and QoL measures were assessed before and six months after surgery. Post-surgery morphine use was examined as an objective measure and a pain score questionnaire as a subjective measure of QoL. VD deficiency (VD level <25 ng/mL) was identified in 53% of the cohort (deficient: 14.9±5.47 vs normal: 35.3±9.40 ng/mL, p<0.001). Six months after surgery, VD-deficient patients reported two-fold greater morphine use compared to those with normal levels (39.0±14.11 vs 184.±178.5 mg/d, p<0.015). VD-deficient patients also reported higher average pain scores at six months compared to those with normal levels (p=0.05). It is essential to monitor VD levels in patients undergoing TP-IAT, as those with low levels appear to have poorer QoL due to higher pain levels. RDNs should monitor QoL measures such as pain medication use and subjective pain scores as markers of QoL as part of their functional nutrition assessment.

RESULTS

TP-IAT patients with vitamin D deficiency reported a two-fold greater morphine use than those who were vitamin D replete. While morphine equivalent use was our objective measure of QoL in this study, TP-IAT patients with low vitamin D also reported poor QoL in terms of subjective pain when compared to those who were vitamin D replete. Limitations to this study include the self-reported QoL measures, including narcotic use, and that this study only examined the time interval from baseline to 6-months post-surgery. Overall, these results imply that it is essential for RDNs to monitor vitamin D status in TP-IAT patients, prior to and after surgery. Additionally, RDNs should monitor QoL measures, such as pain medication use and subjective pain scores as markers for QoL as part of their functional nutrition assessment. Since increasing QoL is one of the main goals of a TP-IAT, it is important to look at all possible barriers to attaining that goal.

REFERENCES