

Determining the effect of dietetic intervention on fat free mass in chemotherapy patients at a rural chemotherapy day unit

OBJECTIVES

Patients undergoing chemotherapy lose fat free mass (FFM) through treatment. Adequate fat free (muscle) mass (FFM) in cancer patients contributes to wellbeing by reducing chemotherapy complications and improving survival. Evidence demonstrating the optimum method to counteract this loss of muscle is limited. Protein is important in stimulating muscle synthesis and maintenance. Studies associate muscle growth with regular, consistent protein consumption, rather than total protein intake. This study, conducted in a Western NSW chemotherapy centre, aimed to determine if consuming 25-30g protein at three main meals per day during chemotherapy maintained or improved FFM over a six month period.

METHODS

This quasi-experimental study was conducted in rural NSW. All new chemotherapy patients (palliative or curative) over a three-month period (September to November 2018) were invited to participate. Measurements of FFM and body fat were obtained using BodyMetrix™ ultrasound. Data from multiple twenty-four hour food recalls, bodyweight, a malnutrition screening tool and a current nutrition assessment tool were collected. Outcome measures were assessed at baseline, prior to the first chemotherapy cycle, then at one month, three months and six months from baseline. Prior to their first cycle of chemotherapy, participants were educated on how to consume 25 to 30 grams of protein at each main meal, with instructive written information provided. Dietary assessment and intervention occurred during each chemotherapy cycle. Nutritional supplementation was used when participants were unable to meet their protein requirements through oral diet. The primary outcome measure was a change in FFM from baseline to six months. The secondary outcome measures were protein amounts per meal and per day, energy intake and weight.

RESULTS

Thirteen participants were recruited (five female, eight male), of which nine were classified as palliative and four as curative. All patients had different cancer diagnoses and chemotherapy regimens. The percentage of participants that maintained or improved fat free mass from baseline to six months was 91%, but this could not be directly attributed to the targeted 25 grams of protein per main meal. Participants did obtain overall adequate protein and energy intakes over the intervention period and a positive correlation between protein intake (as a proportion of required) and change in FFM in the subsequent time period was found.

CONCLUSION

This study was unable to conclude that achieving main meal protein targets of 25g contributed to the maintenance or improvements seen in FFM. However this study does support early dietetic intervention contributing to adequate protein and energy intakes in relation to fat free mass in this population of chemotherapy patients.

KEYWORDS

Protein, Body composition, Cancer, Chemotherapy/antineoplastic therapy, Muscle mass



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