



ABSTRACT

## Medical nutrition therapy and vitamin D supplementation improved nutritional status and quality of life in relapsed systemic lupus erythematosus: a case report

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### Abstract : Nutrition Virtual Symposium 2021 – Oral Presentation

**Background:** Medical nutrition therapy (MNT) plays pivotal role in comprehensive management of autoimmune disease, includes systemic lupus erythematosus (SLE). Meanwhile, MNT for SLE is still not a concern in many international clinical practice guidelines. Many studies reported about nutritional declines and metabolic complications related to long term corticosteroid use in SLE patients, i.e. malnutrition, sarcopenia, hypovitaminosis D, hypertension and etc. Besides, obesity is more expected become important risk factor in SLE.

**Case Report:** A 29-year-old female diagnosed with relapsed SLE with mucocutaneous, musculoskeletal, neuropsychiatric, cardiovascular, renal involvement with class IV nephritis lupus due to drop out of treatment in the early corona virus disease 2019 (COVID-19) pandemic. Patient was also diagnosed with community acquired pneumonia (CAP) and hypertension. Patient was severely malnourished, according to American Society for Parenteral and Enteral Nutrition (ASPEN) criteria, with a history of grade I obese (body mass index 29.1 kg/m<sup>2</sup>) in the past 10 months prior to admission. Patient also experienced vitamin D deficiency (vitamin D serum:6.6 ng/mL) and sarcopenic with fat free mass index (FFMI) 13.6 kg/m<sup>2</sup> and skeletal muscle index (SMI) 2.5 kg/m<sup>2</sup>. Standard therapy of methylprednisolone 4 mg q.d and hydroxychloroquine 200 mg q.d and MNT were given to the patient by a multidiscipline team in the patient's management. Energy intake was gradually increased to meet total energy (30 kcal/kg BB) and protein (1.0 g/kg BB) requirement. Patient was also given vitamin B complex 1 tablet t.i.d, folic acid 0.5 mcg q.d, calcium carbonate 500 mg t.i.d, and omega 3 fatty acid 1000 mg t.i.d. Cholecalciferol 6000 IU/day was prescribed to the patient for 8 weeks. After 1 months, patient's condition was improved.

Serum vitamin D was increased by 26.0 ng/mL and vitamin D supplementation was maintained to complete vitamin D deficiency treatment protocol.

Patient did not experience further weight loss and nutritional status declines. Kidney function was improved (eGFR 1.5 mL/min/1.73 m<sup>2</sup> to 23.1 mL/min/1.73 m<sup>2</sup>). Unfortunately, reduced FFMI and SMI have not been improved because of limitation in protein delivery due to reduced kidney function and high of hypermetabolism in this patient. Nevertheless, patient's functional capacity showed improvement by

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Karnofsky Score 50% (require considerable assistance and frequent medical care) to 80% (normal activity with effort) and hand grip level for both hands (right hand from 18.3 to 21.6 and left hand from 15.6 to 18.2). Lupus quality of life (LupusQoL) was enhanced by 56 to 65.

**Results:** Improved macronutrient and fat composition intake, saturated fatty acids (SAFA) 33.6 g to 18.6 g, monounsaturated fatty acids (MUFA) 8.8 g to 13.1 g and polyunsaturated fatty acids (PUFA) 7.5 g to 11.2 g) were found. Weight loss (59.6 kg to 58 kg), decreased waist circumference (96.2 cm to 95.3 cm), better estimated fat mass (21.4% to 20.8%), and enhanced quality of life were also found after seven weeks of home monitoring.

**Conclusion:** Individual medical nutrition therapy along with frequent home monitoring would help patient and caregiver to achieve therapeutic targets, thus decrease the morbidity and progression complications of T2DM. Further studies are needed to evaluate the duration of home monitoring in T2DM patients with different morbidity.

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**Keywords:** medical nutrition therapy, systemic lupus erythematosus, covid-19 pandemic, nutritional status, functional capacity, quality of life

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