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## **The effect of non-caloric restricted, low-carbohydrate diet in reversing type 2 diabetes mellitus among active Omani diabetic patients attending North Mawaleh Health Centre**

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**Background:** There is growing evidence that low-carbohydrate diet can positively improve glycaemic index in patients with type 2 diabetes mellitus.

**Objective:** This study examined the effectiveness of a Non-Caloric Restricted, Low-Carbohydrate Diet (NCRLCD) in improving glycaemic index over a 24-week period in active Omani diabetic patients attending primary care setting at North Mawaleh Health Centre, Muscat, Oman.

**Methodology:** This is a prospective, descriptive study with longitudinal follow-up and pre-test, post-test comparison. Eighty-three patients were recruited. Blood sample was collected at baseline, 12-week and 24-week. Each patient was advised to follow a NCRLCD (< 80 grams of carbohydrate per day) and exercise recommendations. The primary outcome was glycated Haemoglobin (HbA1c). The level of significance was obtained at p value <0.05.

**Result:** Seventy-one patients had completed the study. Non-Caloric Restrictive Low-Carbohydrate diet significantly reduced the glycated haemoglobin in a 24-week period by 11.58%, from 7.12 % (SD=1.07) at week 0 to 6.28% (SD1.07)

at week 24, p-value < 0.05. This reduction was noticed along with adjustment of diabetic medications with more than three-quarters of patients have achieved optimal glycaemic level at the end of study period. The mean weight had shown significant reduction from 82.63(SD=14.3) kg to 76.67(SD=14.90) kg, p <0.005. However, linear regression failed to show any correlation between HbA1c and weight changes. Diabetic medication was stopped in 18 (25.4%) patients, reduced in 7 (9.8%) patients, increased in 2 (2.8%) patients and remained unchanged in 44(62.0%) patients.

**Conclusion:** Non-caloric restricted low carbohydrate diet had improved glycaemic control in patients with type 2 DM in this study. Further controlled studies are warranted.

### **Speaker Biography**

Salma Alkalbani completed her postgraduate training in family medicine at Oman Medical Speciality Board, Oman, in 2014. She completed her master of public health at University College Dublin in 2021. Currently, she is doing her fellowship training in public health in Ireland. Her main area of interest is non-communicable disease management, including obesity, through health promotion.

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